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# the Accounting Review

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VOL. XXV

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No. 3

Valuation of Inventories.....	SAMUEL J. BROAD	227
Accounting Education for Controllorship.....	W. J. VATTER	236
Education for Controllorship.....	VICTOR Z. BRINK	251
Accounting Hall of Fame.....	J. BROOKS HECKERT	260
The Relative Efficiency of Large, Medium-Sized and Small Business.....	RICHARDS C. OSBORN	262
Uses of Cost Data for Production and Investment Policies.....	LEONARD A. DOYLE	274
Rate Base Problems Presented When Utilities Shift from Retirement to Depreciation Accounting.....	WILLIAM S. KREBS	283
Recent Developments in Accounting Theory and Practice.....	ROLAND W. FUNK	292
The Reality Test in Family Partnerships.....	J. H. LANDMAN	302
Three Major Concepts in Governmental Accounting Theory.....	ROBERT M. JAMES	307
Price and Mortality Expectations and Valuation of Inventories.....	JOHN PAGANI AND WILLIAM O. JONES	315

## DEPARTMENTS

Teachers' Clinic.....	S. PAUL GARNER	320
Professional Examinations.....	HENRY T. CHAMBERLAIN	327
Association Notes.....	E. BURL AUSTIN	340
Book Reviews.....	ARTHUR M. CANNON	342

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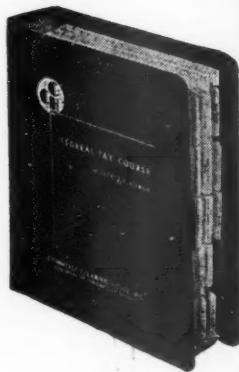
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# The Accounting Review

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JULY, 1950

No. 3 ✓

## VALUATION OF INVENTORIES\*

SAMUEL J. BROAD

*Peat, Marwick, Mitchell & Co.*

FOR AN industrial or mercantile company the proper determination of its inventory is probably the most difficult part of its periodical accounting. It is also the most important, because of the impact which inventories have upon both the balance sheet and the income statement. Historically, and largely because of credit requirements, the balance sheet was considered of relatively greater importance than it is today; and one of the approved concepts for inventory determination was that it should be stated on a conservative basis. Understatement was not considered unsound; in fact it might be praiseworthy. It came to be recognized however that a conservative balance sheet could, and frequently did, result in subsequent overstatements of income; and with the increasing importance attached to the fair presentation of earnings the concept of conservatism for balance sheet purposes as a virtue in itself came into disrepute.

The Committee on Accounting Procedure of the American Institute of Accountants has stated that in accounting for the goods in the inventory "the major objective is the matching of appropriate costs against revenues in order that there may be a proper determination of realized income." In close parallel are the fundamental inventory requirements of the Inter-

nal Revenue Code, namely, that the methods used must conform to the best accounting practices in the trade or business; that they must clearly reflect income; and that they must be used consistently.

A business enterprise starts every fiscal period with a certain amount of inventory on hand; it produces or purchases additional goods. These represent its costs and the process of matching appropriate costs is one which seeks to determine how much of these costs should be charged against the revenues of the current year and how much should be carried forward as a charge to future periods. It is interesting to note that the very names of the two inventory methods most frequently discussed relate primarily to methods for determining the cost of goods sold rather than the cost of goods left in the inventory. "First-in first-out" expresses an assumption under which the goods first on hand or first received are to be treated as the first goods shipped out and therefore to be charged as the cost of goods sold. If we were describing the basis on which goods remaining on hand are stated we would say "last in on hand." The term "last-in first-out" describes the reverse assumption, but again with respect to goods shipped and to be charged as the cost of goods sold. "First in on hand" would describe the inventory basis.

Whichever of these two assumptions we adopt, after the cost has been matched

\* This paper was presented at the Tax Forum of the Wisconsin Society of Certified Public Accountants in Milwaukee, December 9, 1949.

against the related revenue the inventory is in effect a residual amount to be carried forward in the balance sheet to future periods. However, while one might theorize as to whether the inventory is determined for the purpose of getting the cost of goods sold, or whether the cost of goods sold is used to determine what is left in the inventory, as a practical matter the cost of goods sold is very frequently determined by pricing the inventory on hand and charging the rest against sales. In other cases, where adequate and well controlled cost records are maintained, the cost of goods sold is the primary figure determined; the inventory is taken essentially for the purpose of proving the adequacy of the cost records and the reasonable accuracy of the book inventories determined by relieving purchases and manufacturing expenditures of the cost of goods sold.

#### COST

When we regard an inventory as a step in the process of allocating the aggregate costs between the current and future periods it is obvious that the inventory must be based on cost. Cost has been defined as "the sum of the applicable expenditures and charges directly or indirectly incurred in bringing an article to its existing condition and location." The statement of the general principle is comparatively simple but many technical problems and difficult questions of judgment arise in its application, particularly as to the proper allocation of specific items.

During the war, for example, the substantial increase in production and the movement of many trained men into the armed forces or to essential industries resulted, at least temporarily, in the employment of untrained personnel and accordingly in considerable inefficiency, excessive spoilages, training expenses, high supervision costs, and the like. The ques-

tion arose as to the extent to which these should be treated as part of the cost of goods produced or as immediate losses sustained in the period involved. Similarly, the temporary deferring of repairs may mean a very much heavier repair bill later, raising the question whether the repairs subsequently made should be considered wholly as manufacturing overhead of the period in which they are undertaken. Idle facility expense due to low production, unabsorbed overhead, re-handling costs, and a number of other abnormal expenses which arise from time to time require special consideration. I think it is generally accepted that the amount of overhead to be included in inventory costs should in general be related to a normal level of operations, and that abnormal overhead which results from extraneous conditions or from the lack of a normal volume of business should be treated as an expense or loss in the period involved. The exclusion of all overhead from inventory costs, on the other hand, does not result in an appropriate matching of costs against the related revenues and thus is not a generally accepted procedure.

The foregoing is the basis on which standard costs are usually maintained. If standard costs are adjusted at reasonable intervals to reflect current conditions, they are acceptable for inventory purposes. Where they have not been adjusted to reflect current conditions it is sometimes practicable to adjust them on a percentage basis so that the inventory overage or shortage as compared with book amount may be properly allocated between cost of sales and inventories.

#### DEPARTURES FROM COST

Although the cost basis usually results in a proper matching of costs and revenues, nevertheless there are circumstances under which cost may not be the amount properly chargeable against the revenues

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of future periods. A reduction below cost is necessary when the utility of the goods has diminished since their acquisition. This can result not only from physical deterioration or obsolescence but also as a result of declines in the market price. The reduction is accomplished by valuing the goods in question at market.

Some concern has been expressed at the apparent inconsistency with the historical cost basis which results from the adoption of the lower of cost or market basis. It has been urged that profit on the sale of merchandise should always be determined by reference to the original cost of the articles sold if income is to be reflected properly and in the proper period. Let us assume, for example, that cotton goods were purchased for 69 cents a yard in the fall of 1948 with the expectation that they would be sold at \$1.00 a yard, but that due to a decline in retail prices caused by competition in a period of lower volume and a buyers' strike, the selling price was reduced to 75 cents a yard and that the goods were sold at this price early in 1949. Proponents of the original cost basis would say that the profit made in 1949 was the difference between original cost and selling price, 75 cents less 69 cents, or 6 cents a yard, and that the fact that the inventory may have been written down to replacement market of, say, 60 cents a yard at December 31, 1948, does not affect the fact that the selling price was only 6 cents a yard above original cost. They consider that price adjustments in the inventory to reflect replacement market merely have the effect of switching part of the profits, in this case 9 cents a yard, from one year to another.

Historically the lower of cost or market basis was justified by the desire for conservatism in the balance sheet but this justification was insufficient when income determination became the major objective of accounting. The difficulty with strict

adherence to historical cost is that so long as goods on which there has been a price decline remain in the inventory, there is, in effect, a mortgage on future profits in that expectations of normal profits must be reduced until the goods have been sold. This is not the psychology under which inventory write-downs are taken. It is good merchandising to recognize shrinkages when they occur, to reduce prices and be done with it. If this is the business policy adopted, in my view the accounts should reflect it.

The Committee on Accounting Procedure has stated in Accounting Research Bulletin No. 29:

"A departure from the cost basis of pricing the inventory is required when the usefulness of the goods is no longer as great as its cost. Where there is evidence that the utility of goods, in their disposal in the ordinary course of business, will be less than cost, whether due to physical deterioration, obsolescence, change in price levels, or other causes, the difference should be recognized as a loss of the current period. This is generally accomplished by stating such goods at a lower level commonly designated as 'market'."

It is clear that something has happened when the market or replacement cost of inventory items has declined. If a potential loss is indicated it does not seem to be out of keeping with the cost theory to reflect the resulting loss of utility as a charge against operations in the period in which it happens. Further, if cost is not the amount properly chargeable against future revenues for the reason that the usefulness of the goods has fallen below their cost, it seems hard to justify including the usefulness lost as part of the inventory valuations. The lower of cost or market formula provides a practical method for measuring the loss to be recognized and for putting it into the proper period.

#### MARKET

Accounting Research Bulletin No. 29 contains the following definition of the



term "market:"

"As used in the phrase 'lower of cost or market,' the term 'market' means current replacement cost (by purchase or by reproduction, as the case may be) except that:

- (1) Market *should not exceed* the net realizable value (i.e., estimated selling price in the ordinary course of business less reasonably predictable costs of completion and disposal) and
- (2) Market *should not be less than* net realizable value reduced by an allowance for an approximately normal profit margin."

This statement relates market primarily to current replacement cost; but it furnishes both a floor and a ceiling on the extent to which it should be applied and these are both based upon net realizable value. The ceiling is the net realizable value without any allowance for profit and the floor is the net realizable value less an allowance for an approximately normal profit margin. A certain amount of latitude is thus provided and this is necessary in view of the fact that the loss to be reflected must depend upon the circumstances of the individual case. One important consideration is whether a decline in replacement cost will necessarily be followed by a corresponding decline in selling prices.

The Committee pointed out that judgment must always be exercised and that no loss should be recognized unless the evidence indicates clearly that a loss has been sustained. There are cases in which selling prices do not react quickly to lower replacement cost. In other cases a decline in the replacement cost of one raw material component may be offset by an increase in the replacement cost of another raw material component, or by increased labor costs. An unbalanced inventory would introduce another factor to be considered.

There is no purpose in writing down an inventory to replacement cost if there is evidence that cost will be recovered with an approximately normal profit upon sale in the ordinary course of business. This is

particularly the case where a company has produced against firm sales contracts at fixed prices; or where a reasonable volume of future orders is assured at stable selling prices. One can readily see the necessity for different treatment in the case of, say, a packing house, or a sugar refinery where selling prices quickly reflect changes in cost, and the case of a manufacturer of chewing gum, or refrigerators, the prices of which seldom change.

The "retail method" of determining cost, on the other hand, is one in which the costing formula automatically incorporates the factor of realizable value. The inventory is determined first at retail selling prices and then is reduced to cost by an experience percentage which reflects the mark-up taken during the preceding period. If adequate mark-downs of selling prices have been made, the initial figure reflects the gross realizable value of goods in the inventory and this is reduced by a percentage of gross profit which covers costs of disposal and a normal profit margin.

#### METHODS OF ALLOCATING COSTS

There are various underlying theories or assumptions which are applied in allocating the aggregate costs of production or purchasing between the current and future periods. Cost may be allocated on the theory that the first goods to be received are the first goods to be sold, or on the theory that the last goods to be received are the first goods to be sold. An intermediate method, which really is a variant of the first-in first-out method, is "average cost," under which the price is measured by the weighted average cost of goods acquired or produced during a period and goods which were on hand at the beginning of the period.

Specific identification of cost against particular merchandise consumed or sold is approved practice in certain cases such as the leaf tobacco business where the

quality of the tobacco between different crops and different lots may vary so greatly that an averaging of the costs would not be conducive to the most accurate operating results.

The hedging basis of determining costs is frequently used by cotton and grain dealers where commitments, hedging, etc., may be fully as important an element in determining costs as the primary cost of the commodities actually on hand. Here again, conditions brought about by different business policies warrant, and necessitate, the adoption of a variation in accounting practices.

The point I would like to make, and I think it is fundamental, is that the policies, methods and conditions under which a business is operated have an important bearing in determining what method of computing cost is best suited to a particular case. Such policies, methods and conditions should be reflected, so far as possible, in the income statement, and thus in the determination of the amount of the inventory. Accountants have frequently been criticized because there is a lack of uniformity in accounting practices, especially as to the inventory. Such lack of uniformity is necessary and essential to the presentation of financial data which present fairly the position and results of operations. It is necessary and essential because the policies, methods and conditions under which business operates vary greatly and these variations and their effect on operations are an important factor in the operating results.

#### THE CONCEPT OF THE LIFO METHOD

The Lifo method has been commonly adopted for only a relatively short time. The original concept was that it was a method which applied only in a comparatively restricted field where the conditions of operations met certain tests: homogeneous raw materials, slow inventory turn-

over, raw materials representing a relatively high proportion of total costs and subject to wide fluctuations, and selling prices rapidly reflecting changes in raw material costs.

There has, however, always been a good deal of controversy as to just what the Lifo concept is. Throughout its existence writers have referred to it as having been originally conceived as an assumption as to the physical flow of goods, i.e., the last goods received were the first to be sold. Representations still appear in current literature to that effect. Notwithstanding that background, however, and the similar implication attaching to the name Lifo itself, there appears to be general support at the present time for the view that the Lifo procedure represents a practical way of matching current revenues with current costs. It has accordingly come to be regarded also as a method for eliminating from income the gain (or credit) reflected by increases in inventory prices under the first-in first-out method. As the Committee on Accounting Procedure stated in its report to the Council of the American Institute of Accountants in September 1948:

"The lifo method of accounting for inventory costs, as now applied, is an accounting device for applying incurred costs in a manner, the purpose of which is to relate costs to revenues more nearly on the same price level basis than would the fifo method."

Under this view of Lifo it is reasonable also to accept the underlying assumption that costs flow according to a specific pattern. This means that the latest costs are the first to be charged to production and thence to sales regardless of how the goods themselves move. Since the Lifo method, as it has come to be accepted, is essentially a concept in the determination of income, and not an assumption as to the flow of goods, it would seem that if it is a sound method for any company to use, it should be sound for all companies



and particularly those whose inventories are significant in amount, or whose products and costs are susceptible to market fluctuations.

This concept was substantially the one adopted in the Hutzler Bros. case. The decision there was based on the ground that equity as between taxpayers requires that a method of determining costs deductible for tax purposes available to one group should also be available to others. There had been a very substantial inflation in the years since 1938 when the Lifo method was incorporated in the tax law so that taxpayers permitted to use the Lifo method for tax purposes were obtaining advantages denied to other taxpayers. The Hutzler Bros. decision wiped out administrative tax limitations on the use of the Lifo method. In substance it permitted the measurement of the quantity of like goods carried over from year to year by the number of dollars they represented. The Commissioner acquiesced in the Hutzler Bros. decision and the tax regulations were amended to include provisions applicable to companies using the retail method for inventories. Index prices were established for converting the dollar amount of goods on hand at the end of, say, 1948, into a comparable quantity of goods at the date the Lifo basis was first adopted. In November, 1949, the regulations were further amended so as to extend the use of the "dollar value" method of determining Lifo inventories to companies other than retailers who use the retail method. This should be of considerable interest to those using standard costs in their accounting.

The result of adoption of the Lifo method is that gains or losses which would otherwise arise from changes in price of goods in the inventory are substantially excluded from income. It is well to bear in mind, however, that price changes are occasioned by two major factors; first, a change in the value of the currency in

which price is reflected, such as occurs in a period of inflation or deflation and, second, a change in the relative market value of particular goods, which occurs irrespective of the value of the currency in which their price is stated. The impact of this second cause is clear if we look at the advances in price indices for commodities or construction and compare them with the much lower advances shown by the cost of living index. These advances cannot all be the result of a change in the purchasing power of the dollar. They would be uniform if they were. The prices of commodities and construction have increased more rapidly than most of the other elements which go to make up the cost of living, such as food, rent, manufacturing costs, transportation, electricity, etc. We must recognize that the effects of both inflation and relative price changes, in so far as they affect inventory prices, are excluded from profits determined under the Lifo method, whereas the effects of both are included in profits determined under the Fifo method. Perhaps this is responsible for some of the objections to the Lifo method. Gains which result from increases in the relative price level of goods in the inventory may have more substance than so-called gains which are really nothing more than the reflection of a decline in the purchasing power of the currency in which the values are measured.

#### TEMPORARY LIQUIDATION OF BASIC STOCKS

If the underlying objective of Lifo is the matching of current costs against current revenues, a question arises as to what is to be done when more goods are sold than are currently produced or purchased, and a partial liquidation of basic stocks results. In certain instances this may be more or less unavoidable and involuntary; in other cases it may be the result of a definite policy adopted in the light of economic conditions.

Where the liquidation was involuntary and related to wartime causes, provisions of the Internal Revenue Code formerly permitted taxpayers using the Lifo method under certain conditions to deduct for tax purposes the excess of costs incurred in replacing basic stocks over the amounts at which they were carried in the inventory prior to liquidation. This deduction is allowable as a part of the cost of sales in the period in which the liquidation occurred; but the amount of the deduction cannot be calculated until the time of replacement, sometimes years later. No such deduction is permissible, however, in the case of basic stocks voluntarily liquidated or involuntarily liquidated as a result of circumstances not related to wartime conditions.

The use of the Lifo method is predicated on a free market for an adequate supply of the materials of which the inventory is composed. When such a condition does not exist, because of temporary circumstances such as shortage of materials, interruption of transportation, unexpectedly heavy demands of customers, or government control or preemption, it may generally be assumed that an enterprise carrying a normal stock of materials intends to bring it up to its normal amount as soon as opportunity offers. It does not seem logical either that the accidental occurrence of a year-end should create a result different from what it would otherwise have been, or that the results should be affected artificially because outside influences or barriers stayed the normal exercise of judgment and the ordinary flow of business.

It is hard under accounting theory directed towards the determination of profits, moreover, to justify different treatment depending solely upon whether the liquidation of basic stocks is voluntary or involuntary. If the concept of Lifo is the proper matching of current costs

against current revenues, it would seem to be necessary to use replacement cost in either case. To use as part of the cost of sales the price of goods acquired many years earlier, at a price which bears no relation to the sales price, simply because basic stocks have been temporarily dipped into, whether voluntarily or involuntarily, would seem to be a departure from that concept. To determine profit in such a manner could, moreover, result in the manipulation of the operating results. It would be possible to increase them by selling part of the basic stock of low-priced goods at an abnormal profit towards the end of one accounting period, replacing them in the next period and carrying them forward at greatly increased prices.

It would seem therefore that more useful financial statements would result were income to be determined by applying replacement costs against revenues whenever normal stocks are liquidated and it is the normal expectation or the intention of management to replace such stocks as and when conditions make this convenient and desirable. Such a procedure is akin to the recognized accounting practice of reflecting the liability for goods borrowed to meet deliveries at their expected replacement price.

Some argue that it is impossible to predict the price that will have to be paid to replace liquidated stock at some future date, and hence that the financial statements including such estimates will be impaired to the extent that the estimates are in error. It is true that the cost at the expected date of replacement may sometimes be difficult to estimate but in such cases current replacement cost would probably be a reasonable alternative.

There would be no purpose in setting up provision for the excess of the replacement cost over the price at which the goods are carried if there is no intention or prospect of their being replaced. In such cir-

cumstances the question changes into one whether the resulting gain is of a type which should be included in the operating results of the period, or is something in the nature of a non-recurring item requiring special treatment and disclosure. The decision would probably depend largely upon the materiality of the amount involved.

It is not yet clear whether the setting up of provision for replacement of basic stocks temporarily liquidated would be at variance with the tax regulations regarding the use of any method other than the "elective method" in reports to stockholders or for credit purposes. This question requires further exploration with the Treasury Department. It must also be realized that any such provision is not now deductible for income tax purposes; the tax is based on the difference between the price at which the goods were sold and the amount at which they were carried; and when the inventory is replaced the new cost is added to the base stock inventory.

#### LOWER OF COST OR MARKET FOR LIFO INVENTORIES

Another problem which arises in connection with inventories stated on the Lifo basis is whether they should be reduced to market when market is lower than the Lifo cost. The Lifo method has generally been adopted at a time when prices are expected to advance. And with the general price advances over the past several years the problem has seldom arisen. There have been some instances in the last year or so, however, in which market has declined below the composite Lifo inventory cost.

Under the theory of matching current costs against current revenues the injection into costs of a charge which is not related to current costs would obviously upset the relationship. Here, however, as in the case of inventories carried on any other basis, something unrelated to the old costs has happened during the period, a decline in

prices, which has reduced the usefulness or utility of the inventories to a figure less than cost. I think that there would be no difference of opinion if the loss of utility resulted from physical deterioration and that all would agree that this should be reflected in the period in which it happens. There seems to be no sound reason for a different conclusion when the loss of utility results from market factors.

In the case of Lifo inventories, however, there would seem to be a stronger case than any other method for treating the amount of the market decline to be recognized as an item separate from the cost of goods sold. This treatment would seem to be consistent with the Lifo theory. The market decline has nothing to do with the goods sold but relates to the basic stock; and under the Lifo theory the basic stock is something kept separate and apart and divorced from the normal flow of costs and revenues.

In the treatment of any such items in the accounts cognizance should be taken of the pertinent regulations of the Bureau of Internal Revenue. Regulation 111, Section 29.22 (d)-5 covers the relation between the method of presenting corporate accounts and the calculation of the inventory for tax purposes. It contains a proviso to the effect that the taxpayers use of market value in lieu of cost is not considered at variance with the general requirement. It would seem advisable however, in order to facilitate tax examinations, to interpret rather strictly the regulation that the use of the Lifo or elective method for tax purposes is dependent on its use in corporate accounts; and to make certain that the amount calculated on the Lifo method is shown separately in the corporate balance sheet and that the corresponding charge is excluded from the cost of sales figure in the income statement. It would also be advisable to price the individual items in the inventory at their

Lifo cost and to reflect the reduction from cost to market in a separate account.

#### CONSISTENCY

So far I have said nothing about consistency. Consistency is one of the fundamental requirements of the tax regulations relating to the determination of inventories and a change in method requires the consent of the Commissioner who usually imposes conditions upon granting it.

Consistency is also basic in accounting. If the inventory at the beginning of the year were determined by the Lifo method and the inventory at the end of the year by the FIFO method the operating results could be quite meaningless unless the extent to which they had been affected were disclosed. A change from the average cost method at the beginning of the year to the Lifo method at the end probably would not be so far-reaching because its principal effect would be to exclude the effects of inventory price changes during the current year from the year's profits. Comparisons could not be made with the results of previous years, however, unless the effect of the change of method were shown.

This does not mean that the requirements of consistency should preclude a change of method if the change is otherwise desirable. It does mean that if a change has been made which materially affects the results reported the effect of the change should be disclosed. A change in accounting method would probably of itself have no effect on the results shown by an enterprise over its complete life but it could materially affect the allocation of the results to individual years. It could also have an important effect on the

income taxes payable, not only from year to year but also in the aggregate amount payable over the life of the enterprise.

Accounting principles and practices in relation to inventories have developed through a constant process of evolution. During recent decades there has been a considerable tightening up of practices and this has been brought about by recognition of the increased importance of the proper reporting of the income under our economic system. At the same time, as a result of the adoption of Lifo as one of the permissible methods, there has occurred a wider variation than existed before in the underlying concept of income. Both processes have been implemented by high rates of income taxation. In spite of the tightening up of methods and the general narrowing of the range of differences in procedure I do not think it is ever going to be possible to attain uniformity. Nor do I think it is desirable. Significant variations in the operating conditions existing in different industries make variations in methods essential if financial statements are to attain their greatest usefulness.

There is a great deal to be said, however, for as great a degree of uniformity as possible within a particular industry. To some extent this seems to be coming about. The widespread use of the Lifo method in the petroleum industry and the widespread use of the retail method in important segments of retail business are cases in point. These result in a greater degree of comparability between different enterprises and in this manner promote greater usefulness of financial statements to those who base their actions on them. This should continue to be one of the primary objectives of accounting.

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# ACCOUNTING EDUCATION FOR CONTROLLERSHIP\*

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**E**VEN AS RECENTLY as five years ago, the subject of controllership was definitely of minor importance in the curricula of collegiate schools of business—if one may judge from the courses described in the official publications of those schools. To be sure, there were courses in cost-accounting, accounting systems, budgeting, and financial management; but the viewpoint of the controller was presented only as an adjunct to these courses—a sort of by-product that arose more or less by indirection in a series of courses dealing with the impact of accounting techniques on the internal operations of business. Accounting courses were then—and to almost the same degree they still are directed toward the aim of presenting the techniques and procedures of accounting from the viewpoint of a specialist. Accounting is viewed as a professional subject to be studied largely from the viewpoint of the practitioner—who is by and large concerned with problems characterized by *public* accounting. Indeed, there is even a trend toward emphasizing this position even more strongly by the creation of specialized Schools of Accountancy, predicated on the notion that accounting is as much of a profession as engineering, medicine, and the law. At least one school now offers a degree in public accounting in addition to the regular degree in business administration. And in the curriculum of nearly every school of business, accounting is viewed as a field apart from the rest of business administration, not only in the sense of professional specialization, but

as a separate and distinct set of viewpoints, and an emphasis upon problems of accounting and reporting as distinguished from problems of managerial import.

In the real world of business affairs, however, the conception of the controller as a member of the management team, contributing to and concerned with the problems of overall administration and effective control, has grown. And it is becoming apparent that the subject of controllership (as apart from the professional aspects of public accounting) is not only relevant to, but important for collegiate business schools. Courses under the title of controllership are growing in number, and there are now at least thirty schools that offer a course in this subject. Part of this is attributable to the appearance of textbooks and other teaching materials emphasizing the viewpoint and the content of the controllership notion;<sup>1</sup> but the underlying factor is the need for education of a different sort than is provided by professional specialization in accounting.

On the whole, it is a fairly obvious fact that many of the students who "major" in accounting actually find their ultimate careers outside the field of public accounting. Although there have been few studies made to determine what happens to graduates of schools of business in the years following graduation, it seems to the writer that it is safe to say that less than half of

<sup>1</sup> J. Hugh Jackson. *The Comptroller: His Functions and Organization*. (Cambridge: Harvard University Press, 1948.)

T. F. Bradshaw and Charles C. Hull, Eds. *Controllership in Modern Management*. (Chicago: Irwin, 1949.)

David R. Anderson. *Practical Controllership*. (Chicago: Irwin, 1948.)

Billy Goetz. *Management Planning and Control*. (New York: McGraw-Hill, 1949.)

\* This paper was presented at the annual meeting of the American Accounting Association, at Ann Arbor, Michigan, September 9, 1949.



those who specialize in accounting while they are students remain in public accounting for more than a few years, if indeed they even enter the profession at all. Some accounting graduates get into production, finance, marketing, or other fields of management, but an increasingly large number of them find careers in the accounting departments of industrial or commercial companies. These people do not complain about specific deficiencies in their accounting education, but they frequently say that only certain parts of their accounting education were actually useful to them in their subsequent work. Further they say that their accounting training was useful primarily in the sense of providing a background, from which they found it easier to acquire the kind of accounting knowledge they needed for the tasks they were assigned.<sup>2</sup>

Practically every collegiate school of business requires one or more courses in accounting of all students, regardless of the field in which the student intends to concentrate. The relations between these required accounting courses and other parts of the curriculum are often such as to indicate a lack of coherence between accounting and other subjects—especially as regards the process of making managerial decisions in the areas of production, marketing, personnel administration, and the like. There is an increasing (if subconscious) realization that the accounting viewpoint and attitude has more to offer to education for management than a mere emphasis upon techniques can provide. Even the textbooks are beginning to provide more than a paragraph or two in the introductory chapters concerning the implications of accounting for management.<sup>3</sup>

<sup>2</sup> Obviously, the writer bases these statements on his contacts with graduates of two or three schools over a period of some fifteen years. Most college instructors have probably had similar experiences with their graduates.

<sup>3</sup> See, for example: S. W. Specthrie. *Industrial Ac-*

As the tide of interest in that general area of relations between accounting and management (exemplified by the controller notion) begins to make itself evident in courses and textbooks, there arise certain questions that are worth a bit of study and discussion. This paper is an attempt to raise and discuss some of these issues, such as the aims of education with respect to controllership, the content of courses and the methods of instruction to be employed, and the implications of the controller concept with respect to business education in general. To orient such a discussion properly, it seems appropriate to consider first the scope and nature of the controller concept, for this may point out the general aim and direction of education in this field.

#### THE CONCEPT OF CONTROLLERSHIP

Attempts to define the notion of controllership result in unsatisfying and unrealistic statements. To prepare a list of "functions of the controller" is perhaps helpful in gaining some appreciation of the scope of the controller's task, but such lists are seldom more than bare outlines of the things which controllers might do, or of the subjects which might interest controllers. The functions enumerated among the duties of the controller are seldom duplicated in different organizations. Often, the "functions of the controller" are performed by other persons; frequently, the controller participates in managerial ac-

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counting. (New York: Prentice-Hall, 1942), Chapter 14, 24-26.

James H. March. *Cost Accounting*. (New York: McGraw-Hill, 1949), Chapter 12.

George R. Husband and William J. Schlatter. *Introductory Accounting*. (New York: Pitman, 1949), Chapter 34.

James L. Dohr and Howell A. Inghram. *Cost Accounting*. (New York: Ronald, 1946), Chapter 12.

Also to be noted is problem 1, Part II, "American Institute Examination in Accounting Practice," reported in the *ACCOUNTING REVIEW*, October, 1949, pp. 442, 445.

tivities in ways peculiar to the organization and extant circumstances.

It is, of course, easy to align the concept of controllership with the keeping of records and the preparation of quantitative reports. It is true that controllers are as a group more nearly allied with accounting and statistical patterns of thought than with other phases of administration, but the notion that a controller is a kind of glorified accountant is inadequate; for it recognizes only the factual and mechanical phases of the field. The mechanics of recording and tabulating accounting and statistical data are of some interest to the controller, but this side of controllership is of secondary and minor importance; there are other and more challenging issues with which controllers must deal.

It has been said that controllership is "unescapably a reflection of management's own concept of it."<sup>4</sup> Such is to be expected, for in the last analysis management must solve its *own* problems; there are many influences to condition managerial action (in the form of legal, economic, social, and ethical sanctions), but management must allocate its own responsibilities, and build its own structure of intra-managerial relationships. Since the controller is part of the management team, it is to be expected that his cooperation with other members evolves from his relationships with them. His assignment is determined (at least in part) by the attitudes of other members of the management team, and the nature of his job is largely a reflection of the attitude of top management.

However, the scope of controllership is not established by mere whim of management. The relations between the controller and top management are not one-sided, in the sense that management decides

what controllership is, and the controller does what he is told to do by management. The controller *contributes* something to management, else he does not belong on the team. In making this contribution, he can and does affect top management's concept of his task; but he may do much to broaden and deepen operating managers' views of their own problems, and by this means *create* their conception of his task through his own efforts.

To this writer's mind, the nature of controllership is to be found in the relations of give and take at various executive levels in which the controller exercises his influence, and makes useful and helpful contributions to managerial effectiveness. The meaning of controllership is to be found in the nature of these contributions.

What can controllers do to help management? The answer to this question is important from an educational viewpoint, because in the last analysis the content of a job or a function is determined by the degree to which those activities are useful for attaining objectives. Education for controllership is not the mastery of techniques, but it is the building of ideas about management, and the controller's part therein. The following paragraphs may help to formulate the issues involved in education for controllership by indicating the contributions a controller may make to broaden and strengthen the management of an enterprise.

### 1. The logical, quantitative viewpoint

A decision made by management, especially at the level of policy and strategy, nearly always involves consideration of many factors, related to the problem in complex ways, and often of such vague and tenuous nature as to preclude direct and objective evaluation. It is not difficult to see why such decisions are sometimes intuitive, influenced heavily by "hunches"

<sup>4</sup> B. C. Heacock, "Top Management Looks at Controllership," T. F. Bradshaw and Charles C. Hull, Eds., *Controllership in Modern Management*. (Chicago: Irwin, 1949), p. 1.



or what Barnard calls non-logical thinking<sup>5</sup>. The successful administrator must perforce be willing to "play his hunches"; he must hold himself in readiness to move on certain issues when there may be little chance for complete, logical and factual analysis of the problem that must be solved. Intuitive judgment is as valuable and necessary to management as it is rare, and it should be encouraged and developed. But it is also fraught with risks that cannot be taken blindly. One of the principal tasks of a controller is to serve as a foil against which the judgments of operating management may be tested. In this, the controller—as a sympathetic yet independent participant—brings to bear his influence grounded upon factual, quantitative and logical analysis, to balance the intuitive and projective judgments of the rest of the management team.

## 2. The development and coordination of plans

This aspect of the controller concept must be approached with care; it should immediately be made clear that the controller does not *make* plans, any more than he makes any other operating decision. One of the surest ways for a controller to put himself in an impossible and untenable position is to allow responsibility for operating activities to be put on his own shoulders. However, plans must be made, and they must be implemented in such fashion as to make them feasible within bounds of reasonable economy and efficiency. The contribution of the controller in this phase of management is threefold:

### (a) *Emphasis on, and need for, planning*

It is not uncommon to find situations in which the need for anticipating problems through planning is simply overlooked by

operating management. This is understandable, because operating management is a day-to-day proposition, in which details and short-run adjustments are predominant. The controller may serve as a "spark-plug" in the process of planning, by exerting his influence to precipitate forward looking ideas into concreteness. Here, he may bring into play the special viewpoint and the technical tools already mentioned. The controller's detachment from operating details, and his maintenance of a quantitative, logical viewpoint combined with his accounting and statistical interpretations of operating effectiveness, put him in a strategic position to *promote* planning and coordination.

Budgets are an excellent example. The controller should not prepare the budget on his own initiative—to do so would usurp the task of operating management. But he is almost always the focal point around which the process of budget-planning revolves. And it is seldom that budgeting proceeds very far in business without the promotional efforts of the controller.

Government budgeting, of course, does not need to be "sold" to management, since the procedures of budgeting, appropriation, etc. are legally required. However, the legislative insistence on budgeting does not insure consistent and cooperative planning. One of the weaknesses of the government budget is the absence of directed thinking toward specific objectives. The Hoover Commission's recommendations and the recent legislation concerned with "performance budgets" are merely illustration and evidence of the need for a centralized motivation and marshalling of effort toward planning—a force commonly supplied in industry by the controller.

### (b) *Analysis of available data*

The problem of planning is not solved by mere initiation. The future can be

<sup>5</sup> Chester I. Barnard. *The Functions of the Executive*. (Cambridge: Harvard University Press, 1938), pp. 301-322.

approached and provided for only in terms of an understanding of the past and present. This does not mean that plans should be direct extrapolations of the past—such plans are always dubious and risky. More correctly, planning requires that data concerning past and current situations must be analyzed, to establish the patterns that ought to persist, and to forecast the probable effects of new or changed factors. From this viewpoint, past costs are important only to discover *why* those costs existed, and what can be done to better the situation; standards are important only to the extent that deviations therefrom indicate causes or conditions to be avoided or encouraged; and performance, however "excellent," must be re-examined for possible improvement. The controller's attitude in this situation must be to help operating management to understand the past in an analytical sense, so as to plan with intelligence and confidence.

### (c) Coordination

Plans are not always unitary, in the sense that they are simple and direct formulations to deal with a problem or meet an objective. It is perhaps safe to say that a really good plan is the result of considering a number of alternatives, choosing from several possible courses of action, and fitting together certain partial solutions to combine them into an effective whole. Such a process requires compromise and balancing of the possibilities so as to combine appropriate ideas and programs into an integrated and consistent set of proposals. To illustrate in terms of the business budget, the sales department's program must be balanced against production's facilities and projections; research, development, and promotion of new products must be weighed against financial needs for plant modernization, or inventory expansion; savings from large-scale purchasing must be considered in

terms of financial and risk factors involved in carrying larger average inventories. The choice between alternatives when resources are limited is the kind of problem in which the controller's viewpoint is of great value to operating management. The specialized interests and understandable zeal of one executive for his programs must be fitted against similar desires and requirements of others. There is a real need in such a situation for some independent agency to accumulate and interpret such data as may bear upon the problem—not to support or refute positions taken by interested parties, but to preserve and promote equilibrium and objectivity in the interests of the enterprise as a whole. In this connection it is important to recognize that the "facts" put together are not routine products of accounting such as expense statements or unit costs. Here the controller is called upon to act as an interpreter and even a forecaster, as opposed to a reporter of historical data. It is important to recognize that unit costs are no better than the premises underlying their computation. Sunk costs are different from current outlays; fixed costs must be distinguished from variable charges; savings must not be confused with earnings, nor wastes confused with normal costs. The viewpoint taken must be a prospective and projective one, and the data must be collected and interpreted with a real understanding and concern for the purpose involved. Above all, the controller must view such situations with due regard for the best interests of the overall enterprise, in terms of extant policy and formulated objectives.

### 3. Awareness and interpretation of external influences

Most of what has been said above relates to the "internal" phases of enterprise, and the management problems which arise from the viewpoint of the firm as an operating organization. Management is, however,

concerned with its direct and indirect effects on the community. The controller's viewpoint is of great value to operating management. The specialized interests and understandable zeal of one executive for his programs must be fitted against similar desires and requirements of others. There is a real need in such a situation for some independent agency to accumulate and interpret such data as may bear upon the problem—not to support or refute positions taken by interested parties, but to preserve and promote equilibrium and objectivity in the interests of the enterprise as a whole. In this connection it is important to recognize that the "facts" put together are not routine products of accounting such as expense statements or unit costs. Here the controller is called upon to act as an interpreter and even a forecaster, as opposed to a reporter of historical data. It is important to recognize that unit costs are no better than the premises underlying their computation. Sunk costs are different from current outlays; fixed costs must be distinguished from variable charges; savings must not be confused with earnings, nor wastes confused with normal costs. The viewpoint taken must be a prospective and projective one, and the data must be collected and interpreted with a real understanding and concern for the purpose involved. Above all, the controller must view such situations with due regard for the best interests of the overall enterprise, in terms of extant policy and formulated objectives.

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concerned with things that happen outside its direct area of control; frequently it is the controller who is called upon to keep informed of trends and situations in the rest of the business world, especially as these may affect the fortunes of his company.

Although it is obvious that every member of management should be alert to such external situations, it is not so obvious that the available information will be "seen" (implications understood) by operating executives; even if such information is seen, it is not assured that action will result. Sometimes trends observable to a non-specialized manager may be overlooked or dismissed by one weighed down with pressing responsibilities for specialized operations; and it is frequently left to the controller to raise issues of importance from the study of external data.

A classic illustration of this is one controller's suggestion to his management colleagues that observable trends in technology and competitive forces made it imperative to reconsider the firm's long-range objectives. The heavy castings and forgings being produced for the railroad industry would be of small significance in a market subject to increased emphasis on light-weight construction of railroad equipment. This trend, accentuated by competitive influences in transportation, indicated a difficult future for the company, despite its current heavy demand and large volume. Operating executives were "aware" of the situation in a vague sort of way, but it took the controller's long-range viewpoint to raise the issue in all its formidable proportions, and to get the operating management to think constructively about the problem. The controller's contribution here was not in the mere collection of data, nor in the statistical techniques required to produce the forecasts that were handed to management. Rather, it was an emphasis upon

long-run considerations and external influences which, though individually of perhaps small significance, collectively presented a problem with which management ought to be concerned.

#### 4. Systematic policing of management programs

The controller's fourth contribution to managerial activities—one that is universally recognized, though not always clearly understood—is the arrangement of systematic procedures to check upon the ways in which management decisions are carried into operations. This obviously embraces the area of internal control—that systematic arrangement of procedures designed to apply appropriate checks and balances on operating activities, so as to reduce errors, fraud and waste. These procedures are not to be viewed as ends in themselves; instead the principles to be applied must be fitted judiciously to the situation so as to *minimize* interference with normal work-flow, while *maximizing* the net result in terms of efficient output. The compromise adjustment to be achieved requires a real understanding of the problems of administration and real cooperation with operating executives, so as to maintain balance between the extremes of "red tape" on the one hand, and slipshod and careless work on the other.

The fact that good systematic control reduces the need for direct supervision of workers is an added advantage. But it brings with it the need for an understanding of workers as humans with feelings and attitudes; no worker can be treated as a mechanical part of production and maintain zeal and initiative. Here is a problem in psychology in which both the controller and the operating management have a stake.

One of the products of the system of internal control is a stream of data for accounting and statistical records and

summaries; this is an important aspect of reporting procedures. The reports prepared by the controller are largely concerned with internal and specific operating problems, as opposed to general accounting statements. The purpose of such reports is to present to operating management the "facts" from which evaluation of operations may be made. It is the task of the controller to see that such reports are not mere tabulations of data, but that the reports are set up in such a fashion as to not only call attention to items and situations that exist, but also to raise specific issues and questions requiring management action. This is a difficult assignment, involving an understanding of the ways in which operating managers react to such reports; and the controller must know his management in order to really help them meet their operating problems with intelligence and confidence. There are psychological angles in managerial reporting that have not been mentioned in formal writings on this subject.

Closely related to the system of internal control and the reporting activities related thereto, are the operations of internal auditing. Some of this, of course, is built into the system of internal control (e.g., the paper work incident to the payment of invoices) but there are advantages to be gained (both in cost and effectiveness of the work) by carrying on a certain amount of independent review of procedures and transactions after they have occurred. Even the tightest systems of internal control may have weak spots; furthermore, the mere setting up of such a system does not insure its operation. Then, too, there are occasions when it may be less of a drain on overall efficiency to post-audit an operation, rather than to tie it up in a complicated system of red-tape, checks and balances. Furthermore, there are advantages in the *sampling* approach of auditing, as opposed to complete and de-

tailed verification; there is much work still to be done in applying sampling theory to the control of enterprise operations.

The controller is not an accountant, nor a statistician, an efficiency expert, or a prophet. He is something of each of these, and yet something apart from all of them. The only way to describe a controller in the full sense of his contribution to management is to see the situations and the ways in which he carries on his work. He is not a "specialist," for he owes most of his ability to the maintenance of an unspecialized and enterprise-wide viewpoint; yet he must administer effectively a pattern of fact gathering, interpretation and analysis of operating results, so as to provide management with a constant stream of information relevant to decision making, and to press for decisions and action on the issues raised.

#### CONTROLLERSHIP AND THE CURRICULUM

The study of controllership is too broad an area to be encompassed in a single course; the pattern of education required can be drawn effectively only in terms of the whole curriculum. But it should be borne in mind that the purpose is not to train a controller for specific tasks, but rather to provide education that will contribute to over-all appreciation and comprehension of the field. Much of what is taught will be of but little direct value for the student when he tackles a particular job; he will not acquire the skills or the abilities of a controller in the classroom, nor will he absorb much technical knowledge that can be put to immediate use when he goes on the payroll in industry. The aim should be for the student to understand the nature of and the reasons for the operations in which controllers are engaged—not so he may go and do likewise, but that he may be better prepared



to grasp those things he will have to learn on the job.

From this viewpoint, the more important phase of education for controllership is a real comprehension of the problems of administration and management; concentration in the technical area is of less importance than over-all acquaintances with the business environment and managerial activities. This kind of "liberal education in business" is essential for any phase of specialization in business, and it raises complex questions as to scope and depth of subject-matter that cannot be discussed adequately here. The major point to be made for present purposes is that controllership is a part of management, and a concentrated study in this field must be built on a sound foundation of management in its various aspects.

The field of concentration in controllership consists of two parts; these may be viewed as policy-level and procedural areas. Policy-level study is described here before the procedural phase, because the content of the policy-level study logically determines the scope and nature of preliminary work. By building the curriculum backward, so to speak, the nature of the foundation can be better perceived by noting the kind of structure it has to support.

#### (a) *The policy-level*

However important the study of sales, production, personnel, finance, or other management subjects may be from the viewpoint of the curriculum as a whole, it is not possible to understand fully the relations between the controller and "operating" management from isolated studies of the various phases of management. The student should acquire something more than mere familiarity with these areas and the management activities associated with them. He should be exposed to situations in which controllers operate; he should

recognize that the controller's task is more than the mere preparation of reports, yet something less than the making of operating decisions. He should observe the use of administrative techniques in bringing the quantitative and logical viewpoint to bear upon managerial problems; he should understand the ways in which attention may be drawn to things that ought to be taken into account; he should recognize that there are personalities involved even at executive levels, and that different kinds of problems and personalities require different methods and devices. He must learn the importance of perspective and judgment, so that short-run and long-run considerations, strategic and routine issues, relevant and irrelevant data may be kept in proper balance during discussions which may be dominated by immediate and current pressures that obscure the really important issues. In short, the student should see how a controller works by studying situations which call forth the abilities that make controllership effective.

The controller's contribution to top-level management has been given some attention in courses dealing with business-policy. Most schools have such a course in their curricula; but business-policy courses usually do not emphasize the controller's contribution to the solution of managerial problems. To understand this, it is necessary to see what the controller does to help determine issues, and how he operates to assist in their resolution. The main justification for courses bearing the label of controllership really arises from this kind of study. The content of policy-level controllership courses must involve something above and beyond the mere routine of accounting system or the preparation of stereotyped abstracts and reports.

In the construction of courses in controllership at the policy-level, the major problem is the lack of teaching materials to present adequately the issues that ought to

be raised. General discussions (of the sort presented herein, above) are not of much value; these generalizations are made meaningful for the student only when he can relate them to specific situations that have been, or can be, explained. In the absence of direct experience, the only feasible means of teaching this phase of controllership is by the use of case-studies. Very few case-studies are available for this purpose.

Of course, it is possible to adapt cases prepared for other purposes to use in controllership courses. This is not easy to do, however, because the adaptations are always obvious; they show the fact that the case was compiled with other ends in view. A case prepared for use in some other field does not present the situation from the controller's viewpoint, and it is difficult to fill in the gaps or to re-orient the discussion around issues not in mind when the data were collected and the case written up. Cases taken from the areas of management do not contain enough directly pertinent data for the purposes here in mind; yet cases in the areas of budgetary control, systems, or cost-accounting usually place too much emphasis upon methodology. There is a real need for new materials to be collected for policy-level courses in controllership.<sup>6</sup>

#### (b) *The procedural level*

This part of accounting education for controllership is concerned with developing the "visible stock-in-trade" of the controller—the procedural phases of accounting that fall within his jurisdiction. Usually,

it is assumed that courses in cost-accounting, systems, and budgetary control serve the purpose of familiarizing the student with the tools of control. In a limited sense this is true, but there are some reservations to be recognized.

Although it is admitted that the effect of a given course depends largely upon the experience and the ingenuity of the instructor, it is safe to say that most of those courses do not depart from, nor proceed far beyond the textbooks used. If the courses in "procedural controllership" are appraised in terms of the textbooks available to teach them, there may be observed certain deficiencies from the standpoint of education for controllership. Though it is less true in some areas than in others, the textbooks in these fields emphasize the financial or professional, rather than the managerial side of their subject matter.

Traditionally, cost accounting texts emphasize the collection of product costs related to a cost concept compatible with conventional notions of accounting-income. These presentations tend to understate (even at times to obscure) the managerial implications of cost data. To illustrate: practically every cost textbook points out the importance of managerial control of costs; but the relation of control to unit costs is seldom clear. Control is a process effectuated through organization, and the fixing of responsibility for decisions and actions. Yet "department" is seldom mentioned, except with reference to "departmental burden-rates" or as a synonym for process or operation.

Departmental "standing orders" are almost universally set up to show only indirect manufacturing charges, and direct labor and direct materials are universally treated as work-in-process charges which do not appear in departmental accounts. If there is any departmental analysis of labor and materials, it usually appears as

<sup>6</sup> The only published collection of cases and problems intended for controllership courses is *Questions, Problems and Cases in Practical Controllership* by Robert N. Anthony (Chicago: Irwin, 1949). These are arranged to follow the Anderson text (*supra*, note 1, p. 2).

Efforts are currently being made through the Controllers Institute of America to collect case materials by cooperation of member companies and schools of business. These arrangements seem to hold some real promise in dealing with this problem.

a by-product in the form of a work-sheet analysis or recapitulation, presumably outside the formal accounting record. Certainly, if such items as property taxes, fire insurance, and depreciation appear in departmental ledgers, there is good reason for showing details of direct labor and materials in departmental accounts.

The separation of controllable from non-controllable items is important for management purposes; yet traditional presentations make little attempt to emphasize controllable over merely *distributed* or *apportioned* costs. When the bases used for distribution or apportionment are considered, it should be obvious that costs assigned on arbitrary or approximated bases cannot be related to control in the eyes of the supervisor to whom they are reported. The whole subject of departmental accounting needs much more emphasis than a financial-reporting view of cost analysis as related to accounting-income can give it.

Another illustration of the difference between managerial and professional views of accounting arises from the treatment of fixed and variable costs. The fact that costs differ in behavior over certain ranges of activity (output or input) is given attention in all budgeting and some cost accounting texts, especially in connection with break-even charts and flexible budgets. But the cost-accounts seldom reflect this. In the proration of service-department charges, there is no attempt to segregate variable from fixed costs.<sup>7</sup> There is seldom any attention paid to the differences between fixed and variable costs in setting the indirect cost rates or in the analysis of under or over-absorbed charges, despite the fact that some business firms do in fact use separate rates for fixed and variable costs. Differential or marginal

costs are usually discussed (if at all) in terms of flexible budgets for the firm as a whole, despite the fact that the cost accountants' average *variable* cost (obtainable by the use of a separate rate for variable indirect cost) is a useful approximation of marginal or incremental cost.<sup>8</sup>

The problem of shifting price levels presents another situation in which the professional and managerial views of accounting are in contrast. The discussions of "lifo," "fifo," and other inventory procedures are nearly always presented to emphasize the historical income-effect of price changes. The explanations and comparisons in the textbooks are colored by conventional patterns for determining income; the principal issue seems to be one of reporting *historically* the income-effects of changes in price-level.

The managerial view of shifting price-levels is certainly not an historical one—past price changes are for management a kind of ancient history. Educational and interesting as it may be, the historical effect of price change has no relevance to current managerial decisions. Prices are current data; costs and operating figures must reflect current prices to bear upon decisions in the current market. Hence, when price factors are of importance, the cost or other data must be adjusted to current price levels. When price-factors are not relevant, the effects of price shifts must not be allowed to cloud the issue—the effects of price change should be removed from the data so that attention may be paid to the essential parts of the problem free from the distractions of lags and jumps in the data arising from conventional inventory procedures. Hence, when viewing a price-cost-output problem from the standpoint of market strategy, current price data must be reflected in

<sup>7</sup> But see Fred V. Gardner, *Variable Budget Control*. (New York: McGraw-Hill, 1940), pp. 202-208, *et passim*.

<sup>8</sup> W. J. Vatter, "Accounting Measurements of Incremental Cost," *Journal of Business*, July, 1945, pp. 145-156.



the figures; when attempting to evaluate efficiency or control, price fluctuations must be eliminated. In either case, no conventional inventory-pricing procedure will yield appropriate data; it is necessary to view the data in terms of the management problem involved.

This is why standard costing procedures are of advantage to management. Apart from the computation of variances, the use of standard costs makes possible the kind of treatment suggested. Standard costs are themselves "leveled" or normalized for price change to promote emphasis on efficiency in the places where control may be exercised; yet these costs may be adjusted easily to fit the current situation, because the current prices can be given expression by substitution of current for standard prices, or the use of indexes to reflect current price conditions for the elements of cost.

In connection with internal control, there may again be seen a difference between the professional and the managerial notion of accounting procedures. From a reading of currently available texts, one would conclude that the major objectives of internal control were to insure that all transactions are recorded, and to provide some protection against fraud.

In terms of a controller's responsibility, the system of internal control is broader than that. His interest in stores procedures is not only to reduce discrepancies between book and physical inventories, but also to reduce deterioration, obsolescence, and speculative losses. He is concerned with the level of inventory, and the turnover of specific items. He has an interest in sales procedures to reduce errors in the handling of orders, to minimize unprofitable business, to maximize results in terms of sales potentials. He is concerned with purchasing procedures because the purchasing operations can have wide-spread effects upon inventory turnover, price-specula-

tion, and the continuity of operations. There is much more involved in the controller's view of internal control than the verification of prices and the completeness of records.

Far more important than the mastery of procedures, however, is the recognition of the kinds of problems that must be met, and the ways in which the systematic operations of accounting are tied to the management situation. The controller's real "stock-in-trade" is not the operation of an accounting system according to some generalized or specified plan, but of carrying on the process of data accumulation in such a way as to be able to meet the demands which should be made upon him.

Hence, the content of a procedural-level course must of necessity be built around the notion that the accounting system is a means of collecting data—but arranged so that needs can be met most effectively. The idea should be stressed that the routine reports are not the be-all and end-all of the system. An accounting system is a veritable mine of data, classified in convenient fashion to be used when required. Quite apart from the creation of regular reports of operations—departmental budget comparisons, territorial and commodity analyses, and the like—there are other occasions which require the preparation of special reports on particular situations. These may be described best by indicating the questions that might be raised, against which the accounting data may be marshalled.<sup>9</sup>

Should certain products be discontinued? Should a territory be expanded, reduced, or divided? Should a certain part be manufactured in the plant or purchased from outside suppliers? Should extant methods be changed, new equipment

<sup>9</sup> The writer acknowledges his debt to William Blackie, whose "Memorandum on the Need for Development of Administrative Accounting" (circulated privately in 1948) reinforced and expanded earlier ideas along these lines.

purchased, old equipment retired? What is an "unprofitable" customer? Should the firm concentrate on fewer sources of supply for certain materials? What is an economical quantity to purchase at one time? How many units of product represent an "economic lot size"? How are choices made between the use of alternative qualities (sizes or kinds) of raw material? Does inspection cost too much? Should additional orders be taken for certain products, at the cost of reduced sales in other lines?

What is idle capacity, and how can it be reduced? What level of operations represents a "break-even" point, and what is "breaking even"? When should old equipment be replaced with new?

These, and similar questions, are the *raison d'être* of managerial accounting; and the accounting system must provide the data to implement such decisions. Obviously, these questions do not arise systematically, and no stereotyped pattern of reporting can possibly provide data for all these purposes. Rather, the system of reports should be such as will *raise* such questions in consequence of what they do show. The answers to questions such as these are to be found by special studies and analyses in which the *analectic* nature of accounting information is put to use.

The student, in approaching the materials of managerial accounting at the procedural level, must be made aware of these questions and the means of obtaining data related to them. Otherwise, there is no reality or basic meaning to the maintenance of files, records, registers, ledgers, and the like.

Whether the materials just described as procedural content can be encompassed in a single course or whether more than one such course is necessary, depends upon the instructional conditions. The energy and competence of instructors and students will determine how much time is required to gain an understanding of ac-

counting methods and objectives of the sort here described. This writer has been reasonably successful in the attempt to reach this objective in a one-quarter course at the graduate level; there is some basis for a longer time period, however, especially with less mature students.

#### IMPLICATIONS FOR THE GENERAL BUSINESS STUDENT

The approach to the study of controllership outlined in the preceding pages raises one outstandingly important issue, which digs at the very roots of business school curricula in general. This question is of sufficient consequence to discuss here—even at the risk of going beyond the limits of the title of this paper—because of the essential relationship between the preliminary study of accounting and the study of business in any of its phases. The question is: Why should not the managerial approach to accounting be offered as the basic accounting for all students—why should it be limited to those interested in the field of controllership?

The approach to this issue is here based on the fact that practically every school of business requires one or more courses (usually six semester hours) of accounting as an underlying preparation for the study of business. The reasons for this situation are bound up with the fact that accounting is to a large extent the language of business. The student needs to know what assets, expense, revenue, and debt (and other related concepts) really are—that is, he needs to understand the financial mechanism of an enterprise in terms of patterns of relationships. If he is to understand the motive for economic activity in realistic terms, he must know in an operational sense how and by what means income arises, how funds are managed and operations carried on. Accounting does provide a basic framework on which may be built the conceptions of business, and

it is, therefore, right and sound to require of all students a fundamental knowledge of this subject.

But the way in which this is done in traditional courses leaves much room for doubt as to the over-all results of the typical approach. Many students fail to gain more than a memorization of terms and a distaste for accounting from this basic course; a considerable number of them merely suffer through the presentation, manage to satisfy the requirement, and rejoice at the prospect of a future free from accounting!

This writer believes that the reaction to basic accounting on the part of many non-accounting majors results largely from the pattern around which typical first-year accounting courses are set up. The professional viewpoint and the emphasis upon income determination is in his opinion largely responsible for the situation described. A few illustrations may make the point clearer.

The over-all objection to required accounting courses is the amount of detail and "busy-work." Adding voluminous trial balances, making work sheets (and finding clerical errors in them), writing out and posting entries for transactions and adjustments, detailed closing entries (posted to accounts which are then ruled and balanced), reversing or readjusting entries, various and sundry computations of depreciation, "petty" matters of arrangement and format of balance sheets, income statements, and analyses of surplus—and related questions of what should appear in which section—all these are operations to which the untechnically minded student reacts negatively. Without decrying the importance of systematic procedure, and admitting the unfortunate necessity of detail, the writer asks only whether this array of manipulative effort serves the real purposes of a first course as well as it should be served. It is to be

doubted that arithmetic skill can be attained in an accounting course if its acquisition has been evaded previously. The desirability of clerical procedures (based on pen and ink bookkeeping, now useful only for the smallest and least progressive business firms) is certainly open to question. Closing entries add little to the pattern of comprehensions; and, indeed, how many businesses "close" the ledger by merely removing last year's operating accounts to other files? Granting the importance of habits of systematic presentation, it is actually boring for a student to go through hours of clerical toil to achieve a balance sheet and an income statement that his instructor will accept. The writer does not mean to say that accounting can be made painless; but he does feel that the pain should contribute to worth-while results beyond the ability to keep a set of double-entry books on a pen and ink basis.

These objections are more serious because of the weaknesses of required courses in conceptual terms. The typical student "learns" to make adjusting entries, and he "knows" how they are put into the work sheet; but does he really understand that adjustments are simply transactions which happen to be recorded at particular times?

The student also "learns" how to make an income statement, and which items should appear in what part of the report. But does he really understand the relations between accrual income and cash flows? There is considerable emphasis in teaching accounting upon "explicit" transactions (cash receipts, disbursements, purchases, sales) even to the extent of using specialized journals to fit the needs of the firm. But there is too little emphasis on the relations between these and the notions of accrual.

Much time is spent in the classroom justifying the traditional emphasis upon

cost in the determination of expense; much effort goes into the attempt to clarify and make precise the problems of recognition of revenue. And there is always present in these discussions the underlying fact that disbursements and receipts of cash ultimately "measure" the item in question. Why could not the first approach to accounting be based upon cash receipts and disbursements, and the various aspects of accrual and amortization be added to the basic concept as the course proceeds? The traditional balance sheet (or even the revenue and expense) approach assumes the grasp of accrual concepts; the student is thus at once put into a difficulty which he resolves by memorization, rather than by the attempt to understand.

Why cannot the first course in accounting apply itself realistically to problems of control and planning? Instead of pen and ink bookkeeping, cannot account procedures be illustrated from the real world in which cash registers, billing machines, punched cards, and direct filing or posting procedures are used to collect and classify business facts? Instead of adjusting entries being of importance only for completion of a work sheet and conventional statements, why can they not be presented as continuous or non-explicit transactions recorded periodically to state operating charges correctly? The way in which these ideas are approached frequently determines the student's attitude, and consequently his mastery of them.

Most important, however, it should be recognized that most students in first-year courses are not interested (vocationally or otherwise) in public accounting, over-all financial reporting and income determination. The motivation for work in accounting must arise from the students' aims and interests. Therefore, his basic accounting should be related to managerial rather than professional ends. The ma-

terials discussed above under the heading of procedural level courses are far more closely integrated with the needs and the motivations of students in fields such as personnel, finance, and market administration; they are directly and closely related to problems of control in production, strategic decisions and policy formulation in any enterprise. Not only are these materials more realistic and meaningful to these students, but their interest and comprehension of accounting as a part of management will be enhanced.

This last, too, is of real consequence for the advancement of controllershship. When any executive is made aware of the help that may be had and the problems that may be dealt with by real use of the data a good controller can provide, cooperation between him and the controller is easily effected. By helping students to see accounting in its real relation to management, the instructor in basic managerial accounting can provide a background for executive competence, whether or not the student continues with more work in accounting. And, if the first course is made realistic, useful, and interesting, it is not impossible that he will want more of it.

First year required accounting courses—as now presented—virtually exclude those aspects of accounting that are of most significance to real business education. There is a pressing need on the part of all students of business to recognize and understand the managerial functions of the accounting system. The place to meet this need is obviously in the courses which all students will take, not only because this is likely to be the only opportunity for such effort, but because the very existence of accounting arises from its managerial rather than its professional functions. Those who do specialize in professional work will build a more realistic conception of professional accounting from a clear understanding of the source and

the impact of basic data upon managerial actions.

The contribution of accounting to the general curriculum will be greater, and the effectiveness of accounting education can be increased, by proper emphasis upon its relation to management and management's needs. The pattern of education for controllership would thus be not merely another specialization in the curriculum, but an inherent part of the overall program—a vital part of the education that every school of business should provide.

#### CONCLUSION

The viewpoint here presented is not entirely new, nor does it necessarily imply a radical departure from conventional notions of professional reporting. It *does*, however, demand a broader and more realistic view as to what accounting is, and the relations between accounting processes and their objectives. The attitude which makes accounting a phase of, rather than an adjunct to, management entails the handling of data and a presentation of concepts within a broader framework of effective usefulness for the attainment of specific and different purposes. That this will raise problems as to teaching methods and materials is evident; that the task is not easy, is obvious. But it is

certainly better to recognize and meet these difficulties, than by complacency or choice to foster the impression<sup>10</sup> now far too widespread—that accountants are related to business operations only through published reports, the S.E.C., and the income tax!

The presentation attempted here is, of course, hortatory rather than demonstrative; details of such a program must be worked out in terms of opportunities and conditions. However, the task is there; avenues of approach and details of arrangement will be developed, because the needs are urgent, and the objectives are sound.

<sup>10</sup> This viewpoint is evidenced by an article, "The Management of Figures," *Harvard Business Review*, XXVII, No. 1 (January, 1949) 24-33. A few excerpts from this article are of interest:

"Of course, many executives have long been aware of the difference between accounting facts, and business facts expressed as figures. (p. 25)

"Outstanding among the changes which have taken place over the last few years has been the attempt to make a clear distinction between figures gathered for financial statements, tax returns, and other fiduciary purposes on the one hand, and figures gathered primarily for the control and planning of operations on the other hand. (*Idem*)

"The belief has grown that training for excellence in accounting does not train for awareness of general management problems. (p. 27)

"There is no question but that many phases of accounting for income, taking into consideration the requirements of regulatory groups and of taxing authorities, have become a technical subject; but the basic parts of business life remain the same whether financial statements show more or less income merely on the basis of accounting decisions." (p. 30)





# EDUCATION FOR CONTROLLERSHIP\*

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THE SUBJECT of education for controllership is one on which much has been said and written. It is therefore difficult to express any views which are really original. The subject is, however, a fascinating one. This is particularly true because education and the views with respect to it are constantly evolving. Controllership, especially, is a new concept just beginning to emerge in the sense of a definable and measurable type of professional activity.

The developmental and controversial character of the subject are nevertheless the very characteristics which make appropriate continuing contributions through new experience and individual thinking. I therefore venture to add my own thoughts—with the objective, if nothing more, of stimulating further thinking and action which may be the basis of further progress. I venture to speak also because it has been my good fortune to have had some opportunity to view the problem as an educator, as a practicing public accountant, and as a company man. This combination of careers has, I know, had a definite effect on my own thinking, and my experience may, perhaps, make for some integration of a basic philosophy which will be useful to others.

Our problem of education for controllership naturally divides itself into, first, what is our end objective and, second, how shall we go about it to accomplish that end objective. I should like to consider, first, the question of the end objective. Under one view we could say that the end objective is to educate a man in

college who can get a job and get off to a proper start on a controllership career. Certainly, however, our end objective is more than that. We are interested in educating a man who will have the basic training to solve the business problems—both old and new—which he will encounter and to attain full professional stature in a controllership career. This approach means, then, that we must come to grips with the question of what a successful controller should be. While this in itself is a difficult undertaking, we must have a fairly clear notion of what the controllership function is if we are to plan a program which is designed to achieve success in the carrying out of that function.

A number of people have classified the controllership functions in different ways—thus seeking to provide some insight into the nature of the job and thus into the type of man required to successfully discharge the responsibilities involved in carrying out those functions. David Anderson's classification as used in his book "Practical Controllership" is, I believe, as good as any. This classification is (1) the property control function—the control and protection of the assets of the business, (2) the legal function—compliance with legal reporting and record keeping requirements, and (3) the management function—assistance to management in controlling operations and formulating policies. As another approach I like to define controllership as the activity which makes possible the maximum utilization of accounting and its related techniques for management purposes. As such, it involves the design of the records and the related techniques, the operation of the accounting and financial system so de-

\* Presented at the 30th anniversary conference celebrating the founding of the School of Business Administration of the University of Minnesota, January 26, 1950.

signed, and the proper communication and interpretation of the results so that utilization for current control and future planning is assured.

The previously outlined description of the controllership function to a considerable extent represents a sort of idealistic goal not fully attained in any one company situation, and certainly not as well attained as it reasonably should be in business in general. It is, however, a direction in which we are moving, and that is what is most important. Certainly the controller has moved from the carrying out of solely a scorekeeper role and from a preoccupation with technical features to a role where emphasis is placed on the utilization of accounting techniques and data. This has come about in part from the development of the controllers themselves. It has come about also from the changing character of management itself, which now places increasing emphasis on financial analysis and control.

The nature of the controllership job as thus outlined identifies what I consider to be the three major requirements of a successful controller:

- (1) Technical competence;
- (2) Understanding of management needs;
- (3) Ability to work with management.

The first of these requirements which is technical competence is of course a basic foundation requirement. The controller must have a good knowledge of the basic principles and techniques of accounting and financial control. This is necessary because the controller must be able to administer technicians and the technical processes effectively and because he must assume responsibility to management for the soundness of all technical decisions and judgments. The second major requirement is that the controller must understand management needs. Through this understanding the controller can then adapt

and develop the technical features of accounting and financial control to serve the new and evolving needs of management. Needless to say, this adaptation under different circumstances involves both the elaboration of the technical features and at other times the contraction and simplification of them. But these two major requirements are still not enough. The third one, and capstone of them all, is the ability to work with management. This involves the capacity to win the confidence of management and the ability to communicate findings and conclusions to them in such a way that appropriate management action results.

Some further light on the requirements of a successful controller may be had by a few comments as to certain essential personal characteristics. I should like to mention a few which I think rank high on the list:

- (1) Ability to critically challenge and appraise.

The controller must do his own independent thinking. He must of necessity employ the talents of many people on his staff in preparing procedures, policies, and analytical studies, but he must critically appraise the results and add the constructive contribution of his own sound judgment.

- (2) Resourcefulness and imaginative thinking.

The controller must be prepared to deal continuously with new problems and with old problems in new settings. He must be resourceful in cutting through to the basic issues and to thinking about them in an imaginative fashion.

- (3) Ability to organize thinking and action.

Closely related to the previously



stated requirements is the ability of the controller to bring together the thinking of his associates and staff for final decisions which result in definite action.

- (4) Ability to express himself orally and in writing.

Since communication of findings and conclusions is a major requirement, the controller must be able to express his thoughts effectively both in an oral manner and through written memoranda. Effective communication is to a major extent clear and organized thinking, but there are the further requirements of adequate vocabulary, proficiency in English, clarity of style, and the like.

- (5) Capacity for personal relationships.

Since the successful controller must work with management and because also he must administer a controllership organization, he must have the capacity to get along with people. This involves reasonable personality, liking people, and the ability to make people like him.

- (6) Basic integrity.

Like any other human relationship, the controller in dealing with his own staff, other company associates, and management executives must be able to count on others and have them know they can count on him. This involves integrity as to disclosure of pertinent facts, follow-through on commitments or promises, and reliability as to representations.

- (7) Personal Courage.

If the controller is to make accounting and financial control the effective force that it should be, he must when the occasion requires it have the personal cour-

age to stand his ground. These occasions may involve, for example, a significant disregard for established controls or a proposed management action which is ill-founded in the light of sound financial analysis. Obviously, the final decision is that of management, but the strength of the convictions of the controller can influence that final decision to a substantial extent.

- (8) Administrative Ability.

The controller, in a business organization of any substantial size, has a large number of people over which he must exercise either line or functional control. The controller must therefore be a good administrator. He must be able to organize people and their jobs, delegate responsibility, and to measure results.

Before leaving this part of our discussion, I should like to point out that while there may be only one controller in a given company, there are usually a number of other key individuals holding various accounting or financial posts who function to a varying extent as controllers. This is particularly true in a decentralized type of operation where given divisions, plants, or other operations function almost like independent companies, dealing under a local management, with the problems relating to the particular operations. Our end objective as a concept should therefore be broad enough to include all of the controllers and controllership personnel who are responsible for discharging a part of the controllership function.

It is also a good place to point out that the qualities which are essential for a good controller are to a major extent the same qualities which are important in the case of a general management executive. This is well borne out by the fact that many

controllers go on to become operating and general management executives. This close identity of interests and qualifications serves more than ever to give substance to our problem of education for controllership.

Considerable time has been devoted to a discussion of the nature of the controllership functions and of the requirements of a successful controller in carrying out those functions. It was and is, however, a necessary basis for our further consideration of how we are going to go about it to achieve the end objective. It is next appropriate to recognize that the problem of effecting the solution involves both the company itself and the educational phases prior to employment of the individual by the company. We are dealing here primarily with the latter question, although I should like to make brief comments as to the part that concerns the company after it has first employed the young man who has just completed his formal education.

It is to be emphasized that the company has some basic responsibilities in the way of helping to develop the successful controller. It can, by its plans or lack of plans, do much to assist or to hinder the orderly development of the potential controller. In the first place the company should have a plan which provides in a reasonable way for the orientation of the individual once he has joined the company. This may involve only observation, tours, descriptive lectures and the like, or it may involve brief periods of actually working at various types of jobs. It should, however, enable the individual to see the company as a whole and to attain some familiarity with its major components. It should go further in the controllership field of providing an over-all view of the basic organization of the accounting and financial control system and how it works.

In the second place the company should have some kind of continuing plans under

which the possible types of job moves are studied and projected. In this connection there should be one or more normal patterns of job rotation which have been laid out with the objective of rounding out the experience of the individual in the company and of expanding his potential ability. In this connection I should like to point out that the internal auditing department ought to be utilized as one particular type of experience which is of special value to all controllership personnel.

Finally, the company should have a systematic plan under which at periodic intervals—say once or twice a year—the individual's progress is reviewed and appraised. This regular follow-up assures the company and individual alike that the employee is not forgotten and that everything possible is being done to plan ahead for the future. These actions on the part of the company are necessary as evidence of good faith that the company is really interested in developing its people and in turn of furthering the over-all success of the company itself.

Turning back again to the phase of accomplishing the end objective which involves the period prior to the employment of the individual, I have assumed that we are interested chiefly in the part played by the colleges. Education is obviously something which has its roots much further back than that, but for our particular purpose, it is the college phase which is of the most concern and interest to us. Here I should like to break the problem into two parts (a) What kind of a curriculum should we have, and (b) How should we develop and teach the courses which we have selected for the curriculum. We will consider these two questions in that order.

In deciding what is or is not a suitable curriculum for controllership education, the first and perhaps most basic question

is the extent to which professional type courses—using the term in a broad sense—should be included. There is at the one extreme the school of thought that the students' interests will be best served if he devotes his formal education to the so-called arts and science courses—literature, history, natural or applied sciences, and the like. Advocates of this view hold that if an individual has this broad cultural background he can easily enough adapt himself to a professional career by learning the technical and other requirements after he is on the job. At the other extreme is the school of thought which advocates at least a substantial substitution of the arts and science courses for professional courses. The people with these views feel that the student should have some preparation for all of the major types of professional problems which, directly or indirectly, he is likely to face.

There are many intermediate combinations of the two views. Some schools will, for example, exclude all professional courses for one year, some for two years, some for three years, and others for all four—the latter on the theory that graduate school is the proper place for professional training. Which type of combination is best is unfortunately not clear, but certainly some kind of a combination would seem to be the best solution. I might say that the greatest danger is usually the over-emphasis on professional courses at the undergraduate level to the detriment of the exclusion of valuable broad background courses. To some extent this is due to a lack of appreciation on the part of students and those outside educational circles as to the value of the broad background courses. For example, courses in literature can be not only cultural in a broad sense, but they are an important basis for effective writing which, as previously indicated, is so necessary for good communication of findings and conclu-

sions. Similarly, other courses develop perspective and the capacity of judgment.

Let us now turn to some consideration of what types of professional courses are most appropriate for the accomplishment of our previously discussed end objectives. It is neither the time nor the place to lay out specifically what these courses should be. I should like, however, to make some comments as to various types with the objective of identifying what I think are the elements of strength or weakness. These comments will be organized in terms of these various types:

#### (1) Basic Technique Courses.

There are without question certain basic technique courses which should be taken by the student. The most important of these is undoubtedly general accounting. Others on the list would probably include cost accounting, auditing, and statistics. More will be said about these courses when we discuss the manner in which they should be developed and presented. It is sufficient for the present purpose, however, to recognize that the individual must be equipped with the basic tools of his profession.

#### (2) Specialization Technique Courses.

It is extremely difficult to identify properly the courses of this type because so much depends on the way a particular course is developed and presented. There is the very real possibility, however, that courses may creep into the curriculum which are concerned mainly with the elaboration of accounting techniques involving special fields such as, for example, government accounting, brokerage accounting, accounting in particular industries, and the like. It is the sort of thing which

on its face sounds impressive, but can be carried to undue extremes. The student may often get little which has broad application and to that extent may be using his time in a manner which is relatively less valuable.

(3) Descriptive Courses.

Courses may creep into the curriculum which are essentially descriptive of current or historical practice or conditions in particular areas. Courses in Economic Geography are frequently of this type. Courses which may likewise involve some of these characteristics exist, for example, in the fields of income taxes, banking, marketing and corporation finance. The descriptive material may to some extent be the basis for valuable end products in the form of principles, philosophy and perspective, but unfortunately they are often to too great an extent an assembly of information which is memorized and then forgotten. To that extent again the time used has been taken from other courses where it could be utilized with greater benefit.

(4) Courses Relating to Policy Determination and Administration.

Courses in this area would seem to have the greatest value in developing principles and bases for judgment. They would include, for example, courses in cost control, budgetary control, profit planning, production control, business economics, and the like. Admittedly, courses such as those named could be taught in a narrow manner and thus miss the objectives outlined. In general, however, they are more likely to achieve the stated objectives and

too often they are not given the prominence in the curriculum which they merit.

(5) Courses Which Relate and Integrate.

Here is another area of great promise. There is a great need for courses which bring together the contributions of the various courses and integrate them for general controllership purposes. I have previously referred to David Anderson's book on Practical Controllership. One of the most significant merits of this book is the way in which it integrates techniques and areas of application into the total pattern of effective controllership activity.

(6) Curriculums Which Combine Business with Other Professional Education.

It is possible in many cases to develop curricula which combine the basic features of a business education with that of industrial engineering in its more technical sense. Such curricula usually involve a higher cost since the educational period is ordinarily extended one or two years. The value lies in the increased capacity of the controller to understand the physical and operating phases of his company's activities and to better apply and blend the controllership function with them.

The real value of any academic course quite obviously depends on more than the name by which it is listed in the curriculum or even the specified text content of the course. It is also of major importance as to how the course is developed and presented by the instructor. What really counts is the extent to which real meaning

is conveyed to students so that something is carried away in the form of a principle, a philosophy, or a mode of action. We must learn and re-learn the fundamental fact that information as such—whether it relates to techniques, events, conditions, data or anything else—has no really lasting value to a student unless he understands the underlying purposes, the principles involved, and the relation to business management and business policy problems. Such a result equips the student so that he may recognize the application to future problems and thus enable him to form sound judgments and to make intelligent decisions. In what way can we improve our courses to do that sort of thing—that is our major problem. Again the problem is too complex to enable us to arrive at any definite or exact formula. I should like, however, to outline several illustrations of what I have in mind in the way of improving academic courses.

One of the areas in which I believe great improvement is possible is in the way techniques are presented. In this case it may well be recognized that the problem is somewhat different in the case of basic as compared to more advanced techniques. Let us therefore consider them separately and consider first a more basic type of technique. What may happen is that the technique will be presented in such a way that the student memorizes the technique or its application without any adequate understanding of its real origin or the function which it serves. The proper approach on the contrary is to emphasize the underlying problem and need, and then to develop the technique as a means to the end of meeting that need.

Let me illustrate what I mean by discussing the most basic of basic techniques—the debit and credit approach of double entry bookkeeping. At the one extreme, "T" accounts are introduced almost immediately and entries are made

by the student. The student struggles with the technique and ultimately achieves a certain mechanical competence in its operation. Neither does he really understand the technique nor see it in its real perspective. The alternative approach which builds a more lasting philosophy is somewhat as follows. The student is first introduced to Balance Sheets—in fact he is exposed to a number of typical balance sheets of actual concerns. Next he studies over a number of meetings, the major types of business transactions, and their effect on the balance sheet. Next, income statements would be introduced and studied, and their relationship to the balance sheet explained. Next, he is made aware of the need for some orderly means of classifying and measuring the effect of these business transactions on the balance sheet and the related income statement, and at this point the technique of accounts is introduced as a means of meeting the problem. At this time the way in which accounts operate can be developed, but with still no use of the terms debits or credits. Finally, the sides of the accounts are named debit and credit as convenient shorthand designations. The student thus sees the basic technique in its proper perspective—simply as a means to attain a given end.

Now I should like to take a more advanced technique and to discuss the nature of the problem which exists in this instance. Let us take in this case the problem of unit costs. Here the same problem exists of making sure that the student sees the technique in its proper perspective, but there is in addition the further necessity of seeing to it that the student understands the controversial issues, the limitations of the results, the problems of practicality, and the like. Too often the student may come away so impressed with the elaborate techniques of cost allocation that the end result—the unit costs—take



on an exaggerated importance. Too often also the student gets the idea that there is a true unit cost which is obtainable and that, once this true unit cost can be determined, it will meet the basic management needs. In such an instance the student may well be done more harm than good. Under a different approach, the student would understand related matters which would include at least the following:

- (1) That allocation of indirect costs may be made on different bases which are generally acceptable but which will produce different results. The accuracy of the unit costs therefore, to a considerable extent, involves opinions.
- (2) That certain costs, like depreciation, involve somewhat arbitrary judgments and other extremely complicated theoretical issues such as method, recognition of replacement basis, and the like—and that these decisions affect the unit cost results. Moreover, the existence of these factors does much to limit the usefulness of the unit costs except for particular purposes.
- (3) That volume, because of fixed charges, distorts historical costs in both a theoretical sense and for management utilization purposes.
- (4) That even in the case of variable costs, a standard cost may be more useful for management purposes.
- (5) That the expense involved in developing unit costs must be critically appraised in the light of the use management makes of the unit costs.
- (6) That variable costs may be the primary criterion for particular business decisions.

The development and presentation of courses also involves another important area of potential improvement. This is the integration of the subject matter with

basic management needs. The basic management needs involve in the main, protection of the assets for which management has assumed custody, the effective current control of operations and the planning and policy determination to the end of maximizing profits in a long-run legitimate sense. These basic management needs must necessarily be kept in the forefront in every professional course so that at least the particular subject matter can be related to them. The basic test of relation to long-run profits is above all the steadying objective which must be considered at all times.

My final observation in connection with the most useful presentation of courses is that they must provide the setting through proper problem and case material for the student to do original and creative thinking. Too frequently the academic approach is to call for what amounts to the re-playing of the record, repeating a previously-stated principle, or working out a problem along the same lines as an illustrative example. This type of question or problem does not develop the kind of thinking which constitutes sound education for controllership. The characteristics of what I consider to be good problem material include at least the following:

- (a) The presentation of questions or problems in the setting of situations which approximate as closely as possible real business situations.
- (b) The necessity for the student to ferret out the real issues from other extraneous material.
- (c) The presentation of alternative choices which involve controversial and conflicting matters, so that judgment must be exercised in arriving at a decision.
- (d) The later review of the factors to develop habits of orderly analysis, weighing of alternatives, and formulation of sound judgments.

In bringing our discussion to a conclusion it is appropriate and in fact necessary that we give some consideration to the need for supplementing the text book materials in the conduct of the usual professional course. In the first place, we must recognize the limitations not only of the existing academic materials, but of the student and faculty as well. Academic materials of course have the limitation of being reduced to printed pages without the business setting itself. Students have the limitations of frequently being immature and unacquainted with business conditions. It is bound to be true to a considerable extent that we do not appreciate the significance of business problems until our contacts are broadened and until we ourselves come face to face with the particular questions. Faculty members too in general have unavoidable limitations. The load of a heavy teaching schedule and professional writing leave little time for contact with business and business groups. There is in addition a real economic limitation in that teachers can often not afford to carry on the professional contacts which would be so useful to them.

While many of the limitations are substantial and while there is no reasonable hope of their complete elimination, again something can be done. In the first place, the colleges must recognize to a greater extent the need for their faculty members to participate in business and professional activities. This can be done by (a) the allowance of more time for these contacts and activities, (b) the underwriting of the costs of these contacts, and (c) the granting of leaves of absence during which faculty members can work actively in a

professional way. On the side of the company there should and can be a greater participation of business representatives in forums and lectures where the students can be brought into contact with them. This type of thing was done when the writer was offering courses in internal auditing and in controllership practice at Columbia University, and it worked out extremely well. The business representatives who participated in general were pleased at the recognition accorded them through the invitations, and responded in a generous and cooperative manner. Finally, internship programs, as now being introduced in connection with public accounting and to some extent in connection with general business activities, should be extended. The association of the student with real business problems sharpens his interest in the theoretical problems, and brings a contribution to the classroom discussions for the benefit of fellow students and faculty alike.

Looking to the future, the outstanding fact is the greatness of the need for men of real controllership ability. In my earlier days I discounted statements of this type. In the light of experience I know it to be a fact. With the existing need, however, is the basic conviction that we as a nation with our system of education and freedom of opportunity can and will meet the need. We are a resourceful and industrious people. We have problems, but we have a way of studying them and solving them. Through cooperation and diligent application I know that we will make progress. The extent of our progress will depend, however, on how great is our realization of the need and how keen is our determination to care adequately for those needs.

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# ACCOUNTING HALL OF FAME

J. BROOKS HECKERT  
*Ohio State University*

THE DEPARTMENT OF ACCOUNTING at the Ohio State University has established an Accounting Hall of Fame to which will be elected living North Americans who have made outstanding contributions at any time to the field of accounting—public, private, governmental, or educational. Additional elections will also be made to honor posthumously those whose contribution would have warranted election if this Hall of Fame had been established earlier.

Among the criteria for selection are the following:

1. Contribution to accounting literature
2. Public speaking before professional and other groups
3. Service to accounting organizations of a professional character
4. Recognition as an authority in a particular field
5. Public service
6. Previous honor awards in the profession and honorary degrees conferred by universities.

The faculty of the Department of Accounting has appointed a Nominating Board of forty-five, consisting of fifteen public accountants, fifteen industrial and governmental accountants, and fifteen accounting educators. Appointments to the Nominating Board will run for three years (except the initial appointments), and one-third of each class will be appointed each year in order to maintain the full membership of the Board.

Nominations will be made by the Board from which a list of the ten names receiving the highest nominating vote will be resubmitted to the Board for a final vote. Election to the Hall of Fame will be declared from those receiving the highest preferential vote from this final ballot.

Should any member of the Nominating Board be included in the preliminary nomination and be among the ten receiving the highest vote, he will not participate in the final ballot. The Department of Accounting at the University will determine only the number of persons to be honored in a single year. Those so honored will be the ones who received the highest preferential vote upon final ballot.

Accountants elected to the Hall of Fame will be invited to attend the annual Institute on Accounting sponsored each May at the University. An appropriate scroll will be presented at the banquet session and a framed photograph will be appropriately mounted in the halls of the College of Commerce and Administration.

Members of the Nominating Board who have been selected to serve initially and who have accepted the appointment are:

## *Alabama*

Tuscaloosa

S. Paul Garner, University of Alabama

## *Canada*

Toronto

Arthur E. Child, Canada Packers Limited

## *California*

Berkeley

Perry Mason, University of California

Stanford University

J. Hugh Jackson, Stanford University

San Francisco

N. Loyall McLaren, McLaren, Goode & Company

## *Illinois*

Chicago

Willard J. Graham, University of Chicago

Christian E. Jarchow, International Harvester Company

Maurice H. Stans, Alexander Grant & Company

Edward B. Wilcox, Edward Gore & Co.

## Peoria

William Blackie, Caterpillar Tractor Company

## Urbana

Hiram T. Scovill, University of Illinois

## Indiana

## Indianapolis

Howard C. Greer, Kingan & Company  
George S. Olive, Geo. S. Olive & Co.

## Iowa

## Iowa City

Sidney G. Winter, University of Iowa

## Massachusetts

## Boston

Thomas H. Sanders, Harvard University

## Michigan

## Ann Arbor

William A. Paton, University of Michigan

## Michigan

## Dearborn

Victor Z. Brink, Ford Motor Company

## Detroit

George D. Bailey, Touche, Niven, Bailey & Smart

## Minnesota

## Minneapolis

Ernest A. Heilman, University of Minnesota

## New York

## New York City

Samuel J. Broad, Peat, Marwick, Mitchell & Co.

Percival F. Brundage, Price, Waterhouse & Company

James L. Dohr, Columbia University

Paul K. Knight, Arthur Andersen & Company

Edward A. Kracke, Haskins & Sells

John H. MacDonald, National Broadcasting Company

Arthur H. Rosenkamm, New York University

Walter L. Schaffer, Lybrand, Ross Bros. & Montgomery

Philip J. Warner, The Ronald Press Company

C. Oliver Wellington, Scovell, Wellington & Company

## Ohio

## Cincinnati

Joel M. Bowlby, The Eagle-Picher Company  
Kelly Y. Siddall, Procter & Gamble Company

## Cleveland

Thomas M. Dickerson, Western Reserve University

Logan Monroe, Eaton Manufacturing Company

## Cleveland Heights

Henry M. Kimpel, City of Cleveland Heights

## Dayton

L. G. Battelle, Battelle & Battelle

Grant R. Lohnes, The National Cash Register Company

## Oklahoma

## Oklahoma City

T. Dwight Williams, T. Dwight Williams & Co.

## Pennsylvania

## Erie

John H. DeVitt, Hammermill Paper Company

## Philadelphia

John H. Zebley, Jr., Turner, Crook and Zebley

## Tennessee

## Knoxville

Harvey G. Meyer, University of Tennessee

## Texas

## College Station

Thomas Leland, Texas A & M College

## Houston

Ernest C. Breeding, The Texas Company

J. R. Mulvey, Humble Oil and Refining Company

## Virginia

## Richmond

T. Coleman Andrews, T. Coleman Andrews & Co.

## Wisconsin

## Madison

Fayette H. Elwell, University of Wisconsin

For the year 1950, Mr. Samuel J. Broad is serving as chairman of the Nominating Board and Professor James L. Dohr is serving as vice-chairman.

ED. NOTE: The first three men named to the Accounting Hall of Fame are:

George O. May, retired senior partner of Price, Waterhouse & Co.

Robert H. Montgomery, Partner, Lybrand, Ross Bros., and Montgomery.

William A. Paton, Professor of Accounting, University of Michigan.

# THE RELATIVE EFFICIENCY OF LARGE, MEDIUM-SIZED AND SMALL BUSINESS

RICHARDS C. OSBORN

*University of Illinois*

NOW THAT the Federal Trade Commission and the Department of Justice have become more active in their attack upon big business, it seems appropriate to analyze the relative efficiency of large-scale enterprise. The existence of this efficiency has been accepted by certain business groups and set forth as one if not the major justification for the continuance of such large corporations, while evidence to the contrary has been seized, at times enthusiastically and rather uncritically, as sufficient reason for demolishing the giants.<sup>1</sup> Would it not be wise to re-examine the data available on the subject and, if they are not adequate, to acquire sufficient material to provide a basis for future policy determination?<sup>2</sup> If the evils of bigness are so great and so inevitable as to make necessary a reduction in size, then we should at least know what is being given up (or gained) in efficiency and otherwise.

<sup>1</sup> Kemper Simpson, *Big Business, Efficiency and Fascism*. (New York: Harper & Brothers, 1941), p. 29. The author states:

"If the great corporations are not more efficient than their medium-sized competitors, what possible excuse can there be for not breaking them up into medium-sized units?"

<sup>2</sup> Corwin Edwards is one of the group which agrees that there is a great scarcity of valid statistics as to relative efficiency, but he would put the burden of proof on the large corporation to justify its continued existence. In the meantime he would not wait for the figures, which he concludes to be unnecessary, since:

"... even if every plausible claim to preserve bigness on grounds of efficiency should be granted, the concentration of economic power would be decidedly less than it is now. It is probable that without impairment of efficiency we could end many of our industrial monopolies and greatly reduce the power of our conglomerate business giants." *Maintaining Competition, Requisites of a Governmental Policy*. (New York: McGraw-Hill, Inc., 1949), pp. 113-120.

## MEANING AND MEASUREMENT OF EFFICIENCY

Efficiency is a word which is used more often than it is understood. Perhaps this is because it can be employed in different ways which do not have a common meaning. As an economic term efficiency is necessarily related to cost, and that business is most efficient which has the ability to produce and market goods or services at the lowest cost possible under the environmental circumstances facing the management.<sup>3</sup>

Immediately the question may be raised as to what is to be included in cost, and it is evident that the answer on this point is of crucial importance.<sup>4</sup> Is return on investment to be included and, if so, at what rate on what investment base?<sup>5</sup>

<sup>3</sup> This use of the word "efficiency" puts the subject in terms that can be measured with some degree of approximation. Discussion on the basis of so-called social efficiency leads to more uncertain results. This was attempted by Theodore J. Kreps in Monograph No. 7, TNEC Reports, "Measurement of the Social Performance of Business."

He states: "Business is not merely nor even in the first instance a struggle of individuals for wealth. It is a way of life, a system of providing goods and services. Private enterprise, like public organization and other forms of enterprise, justifies itself only insofar as it provides the American People with the highest possible level of consumption or standard of living. Any practice that restricts production, keeps up prices to consumers, or keeps down wages and other forms of mass income is contrary to the charter under which business receives public protection and approval. The acid test of business is not the profit-and-loss statement but the social audit."

<sup>4</sup> For a discussion of some of the more theoretical aspects of this question, see: C. Reinold Noyes, "Certain Problems in the Empirical Study of Costs," *American Economic Review*, 31: 473-492, September 1941.

<sup>5</sup> Since studies of cost have been neither so extensive nor so complete as analyses of return on net worth, the latter have often been employed separately as though



Are costs to be accounting book costs or adjusted costs? How are allowances for differences in external conditions to be calculated? These and many other important questions need to be determined as a starting point but have never been answered in connection with the studies which have been published as evidence of relative efficiency. Most investigations have been based solely on findings with respect to relative costs, without adjustments of any sort.

It should be quite obvious that comparability as to external circumstances is of primary significance. When businesses are operating under such conditions it is reasonable to conclude that the one with lowest cost is the most efficient.<sup>6</sup> This low cost, however, is significant only if continued for a period of years, so that it is clearly based on efficiency of operation rather than on some unusually fortunate circumstance or accounting adjustment. Comparisons then made by size of firm would have some significance, although there would doubtless always be disagreement among interested groups.<sup>7</sup>

What are the factors which tend to make cost comparisons difficult even after the meanings of cost and efficiency are agreed upon? First, costs must be calculated per unit of comparable product. This is difficult not only because different companies or plants produce slightly varying products but also because many firms produce a variety of products. Some

they were valid measures of efficiency. Under certain circumstances the return on net worth might be so used, but it ordinarily involves too many varied factors which are not directly related to efficiency and complicate rather than aid its measurement.

<sup>6</sup> Even then we are merely assuming that the most effective management is as effective as it is capable of being in costs, types of products manufactured, etc.

<sup>7</sup> It is sometimes maintained, for example, that, once a company has reached a size sufficient to gain the advantage of mass production, the efficiency of the management is the major determining element in relative cost. See: John W. Scoville and Noel Sargent, *Fact and Fancy in the T.N.E.C. Monographs* (New York: National Association of Manufacturers, 1942), p. 195.

may be high-cost and some low-cost. In any event, the cost of each is dependent upon the method of allocation of overhead costs, on which opinion will vary even (or especially) among experts.

Second, geographical factors, wage rates, skill of labor, price level at time of plant construction, excess capacity, movements of population, and numerous other factors will affect the cost of production of a particular company, in both the short and the long run.

While it is possible to adjust calculations, at least partially, for geographic variations in costs such as wages by comparing companies of different size in the same area, and to eliminate temporary fluctuations in costs by comparing such costs over an extended period of time, there have been no very satisfactory methods devised with respect to differences in operating capacity, and certain other factors beyond control of the management.

In spite of such unsolved problems connected with the question of efficiency, various investigations have been made of comparative costs for plants and firms of differing size. The data used and the diversely opposing conclusions reached would seem to raise considerable doubt as to the adequacy of our present knowledge. Nor has the issue been clarified much by the numerous statements and a priori reasoning with respect to the assumed advantages or disadvantages of large-scale enterprise.

#### STUDIES ON COST OF PRODUCTION

##### *TNEC Report No. 13*

The most extensive compilation of differences in cost as related to the size of plant or company has been made by the Federal Trade Commission for the Temporary Economic Committee. Data used by the Commission did not involve any new investigation but comprised primarily an assembly from its own files and those

of the Tariff Commission of the studies on variations in cost which had been collected over a period of years. Cost and return on investment were the two tests of business efficiency utilized since,<sup>8</sup>

In the final analysis, efficiency in business means ability to produce and distribute goods at the lowest possible cost. The cost of producing a unit of product is perhaps the most important single test of business efficiency. Due to the inability to secure separate data on distribution costs, the rate of return on invested capital has been used as the second criterion.

Comparisons were made by companies, by plants individually, and by groups. To a certain extent the Commission used its own staff to check invested-capital data which had been furnished by the corporations. The studies covered varying periods of years and widely diversified groups of enterprises, although many of the best related to only a one-year comparison.

Selection of the industries covered was based on availability of data. Included were cost studies in cement, blast furnaces, steel mills, farm machinery, petroleum production, petroleum refining, beet-sugar production, cane-sugar production, sugar refining, milk distribution, butter, canned milk, flour milling, and baking. In addition the Commission included rates of return on invested capital for the motor vehicle, chemical, fertilizer, and rayon industries.

The method used by the Commission in measuring relative efficiency was a peculiar one. Instead of using a correlation procedure or ascertaining the average cost or trend by size groups, it listed plants or companies in rank based on individual plant or company cost. This method, an illustration of which is afforded in Table I, was used separately or combined with average-cost calculations for all industries covered by the cost data.

<sup>8</sup> Temporary National Economic Committee, Monograph No. 13, "Relative Efficiency of Large, Medium-Sized, and Small Business," Washington 1941, p. 3. In the present article, only the cost studies will be discussed.

TABLE I

BOOK FURNACE COSTS OF BASIC PIG IRON (NORTHERN FURNACES) IN 1910 FOR DIFFERENT SIZES OF PLANTS OF THE UNITED STATES STEEL CORPORATION, ARRANGED IN ORDER OF ASCENDING COSTS

Classification of plants according to size of production	Furnace cost per gross ton
1. Medium.....	\$11.94
2. Very small.....	12.14
3. Large.....	12.41
4. Small.....	12.59
5. Small.....	13.06
6. Small.....	13.13
7. Large.....	13.21
8. Very small.....	13.38
9. Medium.....	13.78
10. Very small.....	13.94
11. Small.....	14.06
12. Large.....	14.22
13. Very small.....	14.42
14. Very small.....	14.63
15. Very small.....	15.70
Average.....	\$13.20

Source: TNEC Monograph No. 13, p. 26 (originally taken from data collected by the Bureau of Corporations).

#### Comments

- Lowest-cost plant was medium in size.
- Of three large plants one had a fairly low cost, one had an average cost, and one had a quite high cost.

In only a few cases did the largest plant or company rank at the top of any classification, as seen in the following results for individual company-cost tests:<sup>9</sup>

In but 1 of the 59 individual company-cost tests did the largest company have the lowest cost.

In 21 of these 59 tests, a company classified as medium-sized had the lowest cost.

In 37 of these 59 tests, a company classified as small had the lowest cost.

Of particular significance is the fact that in these 59 tests, on the average, over one-third of the companies in every array had costs lower than that of the largest company.

From these and similar tabulations for individual plant-costs, group plant-costs, and rates of return on invested capital it was concluded that, "The results of the total tests reveal that the largest com-

<sup>9</sup> *Ibid.*, p. 12.

panies made, on the whole, a very poor showing."<sup>10</sup>

Let us examine the extent to which the Federal Trade Commission fulfilled the necessary requirements for valid cost studies. It quite evidently did not attempt to remove, but minimized the importance of, those factors other than size which might have influenced the results, stating that:<sup>11</sup>

In industry there are many factors which may account for the lower costs of one concern in comparison with another, or the higher rate of return of one industrial unit as compared with another. Such factors as location, degree of mechanization, degree of operating capacity, sex of labor, skill of labor, wages, and accidental conditions such as strikes, floods, storms, shifting centers of population, depletion of natural resources, climate and other influences may critically affect at any one time costs of production and rates of return of particular plants and companies. Whether size and size alone, rather than other factors, happens to explain the more effective performance of companies and plants classified as medium-sized or small in the tests conducted by the Commission cannot be definitely determined. But the Commission believes that there may be considerable warrant for the conclusion that the factor of size may well have been a very significant influence in the results of the tests.

Thus, the existence of factors other than size was recognized but subsequently ignored, except in those few cases of cost comparisons which could be made within each region and eliminate the geographical factor for those specific tests.

The Commission differentiated two sets of factors: those over which the management had no control, such as shifts in centers of population, exhaustion of natural resources, and government policies; and those factors under control of the management, such as degree of mechanization, location of plants, and effectiveness in utilizing full operating capacity. The influence of the first set of factors was

waved aside with the statement that:

"It would be unreasonable to assume that the more effective performance of medium-sized and small business units in many industries could be solely the result of factors which lay beyond the control of management. Such factors are likely to affect all enterprises, regardless of size, and are not likely to be statistically biased in favor of any one size classification as against another."<sup>12</sup>

Variations in wage scale were unimportant, since "It appears from the existing data that medium size or small size as often pay better wages than large size corporations."<sup>13</sup>

Differences in percentage of operation were not deemed significant under the circumstances, since,

"Considering the quantity of the tests and the variety of time periods which they cover, it would seem reasonable to conclude that if large size was so invariably handicapped by low operating ratios, such operating ratios were in turn a serious indication of inefficient operation, involving the burdening of the corporations with unused capacity."<sup>14</sup>

Thus, although the Federal Trade Commission indicated, and studies have shown, that utilization of capacity is an important consideration in determining cost, no allowance was made for such differences. It was possible, therefore, to reach the ridiculous conclusion, shown in Table II, that a company operating at full capacity, with a cost per barrel of cement of \$1.14, had a lower cost than one operating at 55 per cent of capacity and having an average cost per barrel of \$1.15. Even a cursory glance at the figures shows the evident absurdity of such a position.

The Federal Trade Commission looked upon the tests of efficiency adopted in its

<sup>12</sup> *Ibid.*, p. 18.

<sup>13</sup> *Ibid.*, p. 18.

<sup>14</sup> *Ibid.*, p. 20.

<sup>15</sup> TNEC Hearings, Part 26, p. 13777. This investigation shows the differences in cost of production of steel by the United States Steel Corporation at varying levels of operation.

<sup>10</sup> *Ibid.*, p. 10.

<sup>11</sup> *Ibid.*, pp. 17-18.

TABLE II  
COSTS OF CEMENT PLANTS IN THE SOUTHEASTERN  
SECTION IN 1929, ARRANGED IN ORDER  
OF ASCENDING COST PER BARREL

Big Five or Independent	Percent of Capacity Utilized	Cost per Barrel
Independent	100	\$1.14
Big Five	55	1.15
Big Five	61	1.18
Independent	68	1.19
Independent	46	1.23
Big Five	53	1.34
Big Five	67	1.41
Big Five	48	1.42
Big Five	87	1.63
Independent	49	1.65

Source: TNEC Monograph No. 13, p. 25 (originally taken from the files of the United States Tariff Commission).

#### Comments

- (a) In the southeastern section, lowest cost mill was fairly small and belonged to a small company.
- (b) Certain Big-Five mills, belonging to one of the large companies, had quite high costs.

inquiry as the best available scientific tests, and showed obvious delight in the outcome of the study. However, the Commission was reluctant to claim that the results proved conclusively the relative inefficiency of large-scale enterprise, even though it expressed little doubt about the methods used or the conclusions reached.<sup>16</sup>

Perhaps the best illustration of the bias which colored the handling of the data, and the conclusions drawn therefrom, is illustrated by the attitude of Kemper Simpson, who directed "the compilation and interpretation of the basic data" in the monograph.<sup>17</sup> He accepted enthusiastically and uncritically all of the material presented in the report, concluding that it had been proved definitely that large-scale enterprise, in addition to being guilty of the major misdemeanors charged against it, is both less efficient and less profitable than small and medium-sized business. The growth of large firms is to

be explained, therefore, almost entirely in terms of financial power and the exploitative practices used to hinder competitors. Thus the giants are considered by Mr. Simpson to be not only uneconomic but a significant threat to the whole democratic system. The general attitude expressed by Mr. Simpson would seem to indicate clearly that his conclusions had been reached in advance of the analysis of efficiency, and that the statistics were arranged conveniently to verify a previous conclusion. Thus, as a basic premise, large businesses are an evil and should be reduced in size, regardless of their efficiency. The showing of inefficiency merely wipes out the sole remaining claim for existence.

The methods used by the Federal Trade Commission and the conclusions reached by that agency have been subjected to rather caustic criticism on the basis of the adequacy of the tests, the adequacy of the samples, the classification of companies, the analysis of the tests, and the general conclusions reached.<sup>18</sup>

Furthermore, "a re-examination of the original data used by the Commission relating to unit costs and size of plant indicates that the relationship between costs and size is quite different from that described by the Commission; large plants generally tend to be more, rather than less, efficient than medium-sized and small plants."<sup>19</sup> In other words, when costs for businesses of different size are averaged,

<sup>16</sup> John W. Scoville and Noel Sargent, *Fact and Fancy in the T.N.E.C. Monographs*. (1942), pp. 190-200. See also: Robert N. Anthony, "Effect of Size on Efficiency," *Harvard Business Review*, 20: 290-306; Spring, 1942, and Joe S. Bain, "Price and Production," *A Survey of Contemporary Economics*, Howard S. Ellis, Ed., (Philadelphia: The Blakiston Company, 1948), p. 141. "Some of the principal shortcomings of this work involve the use of insufficiently rectified accounting costs as basic data, and the non-recognition of differences other than those in scale of plant as the probable causes of the noted differences in average costs among plants of various sizes."

<sup>19</sup> John M. Blair, "The Relation Between Size and Efficiency of Business," *Review of Economic Statistics*, 24: 125-135; 1942.

<sup>16</sup> *Ibid.*, p. 11.

<sup>17</sup> *Op. cit.*

rather than treated on an individual-firm basis, they show that there are certain industries in which the largest units have the lowest costs of any group.

Such an extended treatment of TNEC Monograph No. 13 is clearly not warranted by its quality, and is necessary only because it has been quoted so widely as proof of the relative inefficiency of large-scale enterprise.<sup>20</sup>

#### *Costs in the Iron and Steel Industry*

Although there are no recent figures for the steel industry which compare costs by size of plant or firm, the Commissioner of Corporations published data for 1910 which compared the average furnace costs for plants of different size owned by the United States Steel Corporation. This was done for Bessemer and basic pig iron and for both Bessemer billet ingots and basic open-hearth ingots. The larger plants showed the lowest costs in all four types of production.<sup>21</sup>

As with most similar cost data, certain variables complicate the figures. Southern plants were excluded since their operating costs were so low because of geographic factors, although their total costs were higher than those for firms north of the Ohio River when transportation northward was included in cost. Analysis of costs by districts in the North showed a

greater variation in average costs as between the highest and lowest cost areas than the difference between the largest and smallest plants. Therefore the lack of comparability precludes any clear-cut conclusion which would seem to indicate a superiority on the part of the big plants.

Further analysis for the 1902-1906 period by the Commissioner of Corporations showed that the larger steel companies had lower costs inclusive of materials for pig iron, ingots, and billets. Exclusive of materials, the larger companies had higher costs for Bessemer pig iron and Bessemer billets.<sup>22</sup>

During 1918 the Federal Trade Commission collected data on relative costs in the steel industry by size of firm in terms of integration classes. The data indicated that the largest and more highly integrated corporations had much lower costs regardless of the inclusion or exclusion of materials.<sup>23</sup>

#### *Cost of Rubber Tires*

An analysis of Table III covering prewar natural rubber tires for 1941 and wartime synthetic tires for 1943 will show that the large tire firms had lower manufacturing costs, both inclusive of and exclusive of material costs. Distribution costs, however, were much higher for the large firms and this fact made total costs higher for these businesses. From this condition one author has concluded that the large rubber tire firms are less efficient than the 10 smaller ones.<sup>24</sup>

Further analysis is necessary, however, before any such conclusions can be valid. Not only do we have no data concerning the location of the large as compared with

The author makes the somewhat acid comment: "What is to be regretted about the T.N.E.C. monograph is not only that it arrives at conclusions different from those indicated by the facts but that it may serve to create a quite erroneous impression concerning the quality of the Federal Trade Commission reports in general and of the Temporary Economic Committee Monographs in particular."

<sup>20</sup> "These results and the results of similar studies made by others indicate that medium-sized concerns are most efficient in the American Economy," Carl A. Dauten, *Business Finance* (New York: Prentice-Hall, Inc., 1948), pp. 445-446.

<sup>21</sup> "There is a good deal of evidence that very large concerns are not in fact as efficient as smaller enterprises," S. R. Dennison, "The Problem of Bigness," *The Cambridge Journal* No. 2, November, 1947.

<sup>22</sup> Report of the Commissioner of Corporations on the Steel Industry, Part III, *Cost of Production* (1913).

<sup>23</sup> *Ibid.*

<sup>24</sup> Report of the Federal Trade Commission on *War-Time Profits and Costs of the Steel Industry*, Government Printing Office, Washington, February 18, 1925.

<sup>25</sup> John M. Blair, "Does Large-Scale Enterprise Result in Lower Costs," *American Economic Review*, 38: 148-150; Supplement, May 1948.



TABLE III  
REPLACEMENT RUBBER TIRES: MANUFACTURERS' AVERAGE\* COSTS PER TIRE

	Natural Rubber Tire November, 1941 Cost per tire		Synthetic Rubber Tire August, 1943 Cost per tire	
	4 Large Manufac- turers	10 Smaller Manufac- turers	4 Large Manufac- turers	10 Smaller Manufac- turers
Size 600-16 4 ply passenger car tire:				
1. Direct material.....	\$3.763	3.903	4.048	4.348
2. Direct Labor.....	.432	.541	.867	.996
3. Net waste.....	.047	.051	.168	.145
4. Factory overhead.....	.793	.797	1.629	1.605
5. Total factory cost.....	5.035	5.292	6.712	7.094
6. Warehouse and shipping expense.....	.112	.066	.224	.092
7. Transportation.....	.319	.150	.395	.265
8. Adjustments.....	.098	.094	.231	.260
9. Selling, general and administrative expense..	1.548	.836	1.587	.938
10. Total Cost.....	\$7.112	\$6.438	\$9.149	\$8.649

Source: Office of Temporary Controls, Office of Price Administration, Economic Data Analysis Branch, OPA Economic Series Data No. 10, "Survey of Rubber Tire and Tube Manufacturers," 1947, p. 5.

\* Unweighted arithmetic average.

the smaller firms, but we also know that the distribution procedures differ. The larger businesses distribute over a much larger area and do much of their selling through their own warehouses and sales outlets. Therefore, such costs are included in the totals. The smaller companies, on the other hand, often sell to dealers on an f.o.b. plant basis. In such cases the costs are not comparable, since many of the selling, warehousing, and transportation costs of the smaller firms are borne by other concerns. Also, if the larger firms see fit to sell in distant markets they will naturally have higher distribution costs than the small firms that sell in a local market or distribute through a mail order house or other chain store.

In addition, it may be stated that OPA figures on costs were not considered adequate even by the OPA officials, and the procedure for allowing increases in prices was changed because of the extreme doubt expressed with respect to the validity of the figures. During wartime, also, there were numerous changes in procedure which upset the ordinary relationships.

One of the largest tire companies broke up its production line, which had been the most efficient in the industry, for the production of other goods, and, during the war, its costs for replacement rubber tires were among the higher cost categories.

#### Cost of Producing Crude Petroleum

If averages covering a wide range of oil fields are used, the cost of producing crude oil appears to be slightly lower for companies below the maximum quantity of production, as compared with both larger and smaller companies.<sup>25</sup> The figures do not cover any cost of transportation, nor do they differentiate production carried on in different oil fields.<sup>26</sup> A study of separate oil fields conducted by the United States Tariff commission for 1939, 1940, and the first three quarters of 1941, showed that degree of capacity utilized was a very important consideration; the firms

<sup>25</sup> United States Tariff Commission, Report No. 30, Second Series, (1932), p. 175.

<sup>26</sup> Data furnished in TNEC Monograph No. 13 show a considerable higher cost for both Standard and non-Standard major oil companies than for medium-sized independents.

TABLE IV  
WHOLESALE BREAD BAKERIES  
Unit costs, in cents per pound, for five groups of companies,  
March 1945 and September 1945

	Cents Per Pound				
	Materials	Labor	Selling and Delivery	General and Administrative	Total Cost
March 1945					
Big Four.....	3.66	1.83	1.83	0.23	7.55
10 medium-large.....	3.87	1.50	1.63	0.39	7.39
Medium-sized.....	3.87	1.56	1.67	0.49	7.56
Small.....	3.92	1.64	1.67	0.65	7.88
Smallest.....	4.62	2.11	1.83	0.78	9.34
September 1945					
Big Four.....	3.81	1.80	1.76	0.21	7.58
10 medium-large.....	3.91	1.55	1.61	0.34	7.41
Medium-sized.....	3.89	1.59	1.66	0.46	7.60
Small.....	3.93	1.64	1.63	0.58	7.78
Smallest.....	4.59	2.02	1.74	0.77	9.12

Source: John M. Blair, "Does Large-Scale Enterprise Result in Lower Costs?" *American Economic Review*, 38: 147, Supplement, May, 1948.

with the largest production had the lowest cost only in the Long Beach field and for 1941.<sup>27</sup>

#### Cost of Bread and Flour

Most studies on the cost of bread disclose that costs are lowest for some size group other than the largest. Similarly, the unadjusted cost of producing flour is not the lowest for the largest companies, whose production is spread over several geographic areas.<sup>28</sup> Unfortunately, no data are available to show comparative costs within each area.

A recent study, summarized in Table IV, indicates that total wartime costs for the big four in the baking industry were higher than those for the next smaller size of firm.

#### Cost of Milk Distribution

A reworking of the original figures used by the Federal Trade Commission on the

cost of milk distribution in West Virginia for 22 dealers in 1933 indicates that total costs of distribution were lower for the largest firms, and were approximately the same, exclusive of milk costs, for the two largest classifications.<sup>29</sup> Butter costs, on the other hand, were lowest for centralizers producing from 1,000,000 to 5,000,000 pounds in 1918 and second largest for the biggest companies producing in excess of 20,000,000 pounds each. The difference in costs between the two groups was negligible, however, being less than one-half cent a pound, or approximately one per cent.<sup>30</sup>

#### MISCELLANEOUS COST STUDIES

Analysis of the cost of producing cement by size of plant for 126 plants indicated that the large plants had a substantially lower cost than the small ones, with the second largest plant sizes with annual production of between 1,500,000 and 2,224,000 barrels showing a cost of three eighths of a

<sup>27</sup> United States Tariff Commission for the Office of Price Administration, *Report on the Cost of Producing Crude Petroleum* (Washington: 1942), pp. 19-20.

<sup>28</sup> Federal Trade Commission, *Competition and Profits in Bread and Flour*, Senate Document No. 98, 70th Congress, 1st Session (1928).

<sup>29</sup> R. O. Stelzer and L. M. Thurston, *Milk Distribution Costs in West Virginia* Bulletin 266, Agricultural Experiment Station, College of Agriculture, West Virginia University.

<sup>30</sup> TNEC Monograph No. 13, p. 58.

cent per barrel lower than that recorded for the plants above that size.<sup>31</sup>

In the production of beet sugar the cost of production per pound was found to be lowest in the largest plants.<sup>32</sup>

On the other hand, unit production costs for 1941-42 in both the mixed and bulk superphosphate fertilizer industries were lowest for companies smaller than the maximum size.<sup>33</sup>

#### CONCLUSIONS

The statistical evidence which is available with respect to efficiency, as measured on a cost basis, is highly conflicting. The largest businesses appear to be the most efficient in some fields, next to the largest firms have lower costs in certain industries, while medium-sized firms have shown the lowest costs in other investigations. Small-scale enterprise not only produced a minor proportion of the total volume in the basic industries, but had relatively high average costs in most cases. It seems quite evident therefore, on purely economic grounds, why the medium-sized and larger units have become predominant in the principal fields of manufacturing, and it is further apparent that small businesses, limited to supplying a local market, are not to be considered of great significance in comparisons on a national scale. Manufacturing is essentially large-scale, and any choice of the most efficient size will be made in terms of sizable units.

From a practical point of view it is necessary to determine what to do with monopolies now that we have them. If it is decided that, by one method or another, they should be eliminated, then the probable

result must be studied not in terms of fifty small firms operating under perfect competition but in terms of not more than half a dozen large firms operating under conditions of oligopolistic competition. Is it not futile to envision for industry what might possibly have existed if different anti-trust laws had been rigorously enforced during the past fifty years?

But suppose that, after complete analysis, we find medium-sized businesses have lower actual costs than do the largest in the field. Does this mean that the large corporation should be broken up immediately into smaller entities on the assumption that this reduction in size will automatically result in raising the level of efficiency of the individual segments to that shown by efficient medium-sized firms? To so decide would be to conclude that the efficiency was due entirely to the smaller size; whereas in actual practice many of the less efficient and more poorly located plants would prove to be high cost and would fail. Under certain circumstances this might result in a more efficient economic system, but not if the higher costs had reflected lower profits rather than higher prices, in which case the social benefit from such a procedure would be open to question.

The extreme lack of comparability of figures relating to cost confuses the picture of relative efficiency, since many factors other than size can enter into cost differences. There are geographical, accounting, organizational, wage, and miscellaneous differentials which complicate the issue. In addition, the large firms operate on a nationwide basis and combine varying costs from scattered areas; some of these costs are likely to be low and some are certain to be high. Furthermore, cost figures are usually compiled for too short a term of years to include periods of both prosperity and depression. If they were so extended, it is probable that some of the

<sup>31</sup> John M. Blair, "The Relation Between Size and Efficiency of Business," loc. cit., p. 129. Original data were derived from the files of the U. S. Tariff Commission.

<sup>32</sup> *Ibid.*, p. 131. Original data were derived from the files of the U. S. Tariff Commission.

<sup>33</sup> John M. Blair, "Does Large-Scale Enterprise Result in Lower Costs?," *American Economic Review*, 38: 150, Supplement, May, 1948.

larger companies would make a better comparative showing because of their greater degree of stability and continuity. On the other hand, the more highly integrated corporations, with extensive properties supplying raw materials, sometimes find that such capacity results in rather high average costs because of idleness during a depression.

Still another problem confronts the analyst of efficiency. Even if a large firm, which represents many mergers and additions, were the most efficient in terms of having the lowest costs in those factors within the control of the management, it would probably not have the lowest accounting costs. How could it have the lowest costs when the original combination of its components resulted from a grouping of many plants, some of them with low costs, some with medium costs, and others with high costs? Consequently, the very act of consolidation brings together varying degrees of efficiency. Is it not too much to suppose that, even under unusually favorable circumstances, the company will have the lowest costs of any in the field? The mere act of consolidation cannot be expected to turn a conglomerate of efficiencies into the most efficient form of operation.

A study of consolidations will show that they have not always been concerned with the operating efficiency of the firms which are combined. In the establishment of the United States Steel Corporation for example, the primary purpose was clearly not that of combining into a giant company either the most efficient or the most profitable units. Rather, the apparent motive, aside from the profits to the promoters, was to eliminate the low-cost competition of the Carnegie Steel Company by combining it with former competitors. Such a combination could not automatically result in low-cost operations. Giant size of itself would not be expected

to insure lower-cost operation than that provided by a medium-sized firm which had not acquired high-cost plants. Extraordinary skill would be needed to create relatively low-cost operation out of a combination of low-and-high-cost plants. Since most combinations have represented such a mixture it is somewhat indicative, although not at all conclusive, of their relatively high degree of efficiency that they have such comparatively low costs as are shown in mass cost comparisons.

Much of the criticism of bigness, although supposedly based on the issue of relative efficiency and upon the many questionable practices of large corporations, has not really stemmed directly from either, but has reflected instead an enthusiasm for small business.

A major argument against large-scale business, and one which seems to permeate much of the philosophy of the Federal Trade Commission, is that large-scale units which control a sufficient proportion of the market to exercise monopoly power should be broken up regardless of their efficiency. Even though they might be the most efficient, the social and economic disadvantages arising from the actual or potential monopolies would be so great as to require their elimination as a menace to society. What if efficiency were reduced? Prices to the consumer, under conditions of competition, would probably be at least as low, even with the reduced efficiency. This point of view keeps alive the old notion of an economic system in which there is vigorous price competition among a large group of small independent units.

Under present conditions of collective action and growth, both national and international, is it not unwise to attempt the reconstruction of a system of small business? Little appears to be accomplished thereby, aside from the political prestige gained by certain individuals in pleading for the "small man." Placing

small business on a pedestal is a fetish in our economy which is really detrimental to our recognition that the problems of our economic society relate to the handling of large-scale units effectively, and not to determining how to make them smaller and less efficient units, in a reversal of the historical and worldwide trend toward collective action. Economic theory applicable to small-scale units always operated in a somewhat rarefied atmosphere but the vacuum has now become rather complete. Regardless of what may happen under certain circumstances, such events have little significance if they are divorced from present and future reality. Even if the theory may have represented an approximate explanation at one time, it no longer does so and is not likely to become more realistic in the future.

From the foregoing discussion with regard to the necessary significance of large-scale operation it follows that proposed reductions in the size of corporations would certainly not reduce them to the category of small business. And yet the philosophy of "reductionism" still clings to the outmoded notion of an automatically operating system in which price adjustments create instability for the small-scale individual business but result in a stable equilibrium for society as a whole.

Without entering further into the endless argument as to whether stability was actually created—or could be created—by such a process, it is evident that such flexibility is not compatible with large-scale firms. Nor does our economic theory of competition among small corporations, which treats the operations of oligopoly and monopoly as deviations from the normal condition, afford a satisfactory explanation for current economic behavior.

For many years after it became evident that extensive competition among railroads would be ruinous in nature, Congress

still tried to enforce as much competition as possible. In trying to break up large-scale business units, the Federal Trade Commission and many economists may likewise be trying to hold back what appears to be an almost certain development. It might well be preferable to recognize the essential primary significance of large-scale business and the relative insignificance of small-scale operations, and then decide how to keep the large-scale corporations from following practices which are opposed to the public interest. Although recent analysis of big government has shown innumerable inefficiencies, the suggested remedy has not been one of demolition into segmented units as is suggested for giant business; rather, more intelligent organization and administration are suggested for a continuing entity of mammoth proportions.

As part of any program with regard to the ideal size of corporations the aim of our economic system must be determined. It has been stated often that individuals would rather be starving free men than fat slaves, but proof of this has usually been lacking for all but a small minority. Individualism has gradually declined so that college graduates, for example, generally think in terms of going to work for a large organization rather than starting their own businesses. Farmers have given up individualism for subsidies. Centralization and collective action are everywhere replacing individual choice and action—in our search for higher incomes, security, full employment, and the like. The last national election reflected the trend of public thought and indicated an increasing acceptance of those governmental functions which reduce freedom of action and individual initiative of the type that we at least imagined were ours. In this we have also been inconsistent, financing British socialism rather directly and Russian communism indirectly while dis-



claiming the former and carrying on witch hunts and purges of our colleges in connection with the latter. Yet we move in the direction of both, probably not even realizing that, if big business is actually inefficient in private hands because of its size, the results in this regard will almost certainly not be improved if government-owned business of still larger magnitude should replace our existing economy.

A final point might be considered. Is it not quite possible that efficiency may become rather insignificant in future deter-

minations of the maximum allowable size of business corporations? Matters of cost can very easily be subordinated to other economically less important considerations in bargaining procedures between large corporations, giant unions, and big government. In the long run, the combination of these three pressure groupings will change our economic structure in ways that cannot be forecast with accuracy, but the outcome is likely to leave numerous businesses in excess of their most efficient size rather than below it.



# USES OF COST DATA FOR PRODUCTION AND INVESTMENT POLICIES\*

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**I**N A PAPER addressed to a joint meeting of accountants and economists, it is pertinent at the outset to explain the extent to which cost analysis is the role of the accountant, and the extent to which it is the role of the economist. In the great majority of firms, cost analysis is the function of the accountant, and the accountant frequently is a man whose training in economic theory and in statistics has not been extensive. On the other hand, a large number of the economists who write concerning the use of costs by management have only a nodding acquaintance with accounting procedures and problems. At most universities, for example, a candidate for the Ph.D. in economics is required to have a reading knowledge of two foreign languages, and some proficiency in statistics. He is not required, however, to demonstrate any knowledge of accounting—the source of a substantial volume of statistics and the presumed basis for all work in cost analysis. I suspect that for some time in the future most cost analysis for managerial use will be done by accountants, and most empirical cost studies of firms or groups of firms will be done by economists. Since this is addressed to university professors of accounting, most of whom have had work in economics and statistics, my concern will be with the uses of statistical and economic analysis as aids to the accountant.

My reason for raising the question concerning the person who is to do cost analysis is that I believe that a great deal of the

discussion of cost analysis leaves out of account the fundamental question of the original accumulation of cost and production data and starts with the proposition “given data on cost and output, how should it be analyzed for certain managerial decisions?” Whose job is it to give the data? Are data given in a vacuum, or does some person decide what data should be accumulated, how it is accumulated, and test its reliability? With respect to production policy, there is a fairly wide difference between the approach of the economist and that of both the cost accountant and business management. This difference is the relative emphasis accorded the problem of determining cost. The economist tends to assume that management is able to produce at the minimum possible cost for any given level of output. Based on this assumption, the economist directs his attention to the relation between cost and output in relation to revenue prospects. The cost accountant, reflecting the views of management, devotes a large share of his time to determining what cost should be at a given level of output, and then to analyzing why, in fact, that cost was not achieved. The economist, with his emphasis on static analysis, assumes a “given state of the industrial arts” for the short-run and often overlooks the fact that in some manufacturing operations management has alternative methods of production from month to month and even from day to day. In other manufacturing situations the plant manager is confronted with changing factor quality and prices from period to period. In such situations the analysis of cost should provide top management with

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information concerning the efficiency of operating management in dealing with those variables over which it had control, and should isolate the effect of variables beyond the immediate control of the operator and determined by either outside forces or higher managerial policy.

In discussing the uses which top management of a firm may make of cost data in formulating production and investment policies, I shall confine the discussion to situations in which management accepts the going price schedule and adjusts output to it, and to a special case in which investment policy is directed toward certain broad market objectives in which setting price is a secondary consideration. An attempt will be made to stress the interrelationship between accounting and economic theory in the analysis and use of cost data. The analysis will be concerned first with the single-product plant, and second with the multi-product plant.

#### COST ANALYSIS FOR PRODUCTION POLICY— SINGLE-PRODUCT PLANTS

In theoretical terms, the production policy of a firm should be to produce the quantity at which marginal cost is equal to marginal revenue. In a market which is not stable, the best cost combination for a given output may change from time to time. How can top management evaluate the performance of a plant manager in producing the quantity scheduled? Standard costs are the usual solution, but they may be used in ways different from the conventional procedure. The usual standard cost procedure is based on a standard of technical performance, and the aim is to measure in dollar terms the excess costs arising from failure to achieve the standard. The variances from standard are computed and labeled, and the process of so doing is often called "variance analysis." Actually, there is little *analysis*, only

computation. If we look at the standard cost procedure as a means for isolating the effect of the variables which influence cost, we will understand that the *variances* must then be examined in terms of the *assumptions* used in devising the standard. This may mean an exercise in logic, statistical analysis, or both. Two illustrations, one from a job order plant, and one from a continuous process plant, will serve to show the possibilities of this approach to variance analysis.

The first illustration has to do with measuring performance in an aluminum rolling mill. The initial major operation in an aluminum rolling mill is the melting of primary metal, scrap, and alloy material to produce cast ingots for rolling. In developing standard costs the usual practice is to develop the standard cost in terms of the best production technique and the lowest material cost. Such a procedure removes from the operator any discretion in selecting from alternative production techniques. It is based on the assumption that engineering studies will develop the best procedure. In making aluminum alloys, however, it is possible to use varying amounts of scrap, the amount depending on the alloy being made and on the nature of the scrap. In the case under discussion, management wanted a cost procedure which would measure the effectiveness of the operator in utilizing scrap. The standard cost of each alloy, therefore, was based on the use of primary metal and alloying material, with the melt loss, scrap yield and furnace time related to the use of such metal. Standard costs were developed for furnace time on the assumption that the cost of operating a furnace for an hour is not influenced by the alloy being produced or by the yield. It was expected that credit variances would be a *normal thing*, but that such variances would measure the revenue (savings) resulting from the use of scrap when it could be pur-

chased at a price sufficiently below that of primary metal to result in a lower cost per pound of good production than if primary were used. It was expected that the use of scrap would produce a credit price variance and debit variances for melt loss, scrap, and furnace time. In this case management wanted the operator to see that the debit variances arising from the use of scrap are more than offset by the credit price variance obtained by buying scrap at a price below that of primary metal.

The accounting procedures just described assume as a normal thing that the works manager of the mill is a free agent in buying his raw material. In fact, however, such is not always the case. If, as in the case in question, the rolling mill is one plant in a vertically integrated company, top management must decide when the fabricating plants may enter the scrap market and when they should withdraw. Given the price structure and the resulting sales volume, the reduction plants will turn out just enough, more than enough, or less metal than the fabricating plants require. Because of long-term power contracts, the rate of production of primary aluminum is not subject to frequent change. Top management therefore requires a certain type of cost analysis to determine whether it should, in effect, make or buy. For this decision the marginal cost of primary aluminum must be estimated. In theory, if the price of scrap, taking higher melt and scrap loss and furnace time into account, exceeds the *marginal cost* of primary aluminum, the fabricating plants should withdraw from the scrap market if sales volume is low enough to result in the accumulation of inventory of primary. In an industry subject to severe fluctuations in demand, however, management must accumulate inventory in periods of low demand to take care of periods of high demand. This represents

an investment decision. In order to provide data for this decision, it is necessary to determine the cash outlay really required for the inventory. Here again only marginal cost is relevant, for this is the amount of *additional* investment required.

Returning to the standard cost of alloy ingots, another use of a standard cost is to provide data for the evaluation of existing techniques in relation to new techniques. Before deciding that a method or process is uneconomical, it is necessary to know that such a method or process is producing at the lowest possible cost. Analysis of variance from standard should produce this result. If a new piece of equipment is purchased, the use of a standard based on the old equipment will provide a dollar measure of the saving actually made with the new equipment. This permits management to check engineering cost estimates against actual results. The lower costs should, however, be incorporated in the new standards for the next fiscal year.

In many factories producing a multitude of finished products there are several options open to the planning department for the production of a product conforming to certain specifications. In such situations the development of a standard cost of each possible product is an undertaking of questionable value. To do a satisfactory job requires varying the standards for the size of order, for the sequence of operations and for the specifications required. It is the writer's view that effective control of such operations is facilitated by a cost procedure which reduces the variables affecting the final unit cost but which does not require actual computation of variance. This can be accomplished by establishing a standard cost for the material entering the process, and by the use of standard machine hour rates. Such a procedure limits the variation in final cost to two factors: scrap yield and machine time. These variables can be isolated and analyzed by

statistical techniques to determine the influence of volume and random variation in efficiency. In analyzing such data, the writer has found that an increase in volume tends to produce lower scrap yield and less machine time. In large part this is due to the fact that a change in total volume is not accompanied by a proportionate change in the number of orders, but that the average size of the order tends to increase with an increase in total volume, and to decrease with a reduction in total volume. In such a situation, full standards should not be attempted because the standard performance is subject to too many variables.

A second example of the problems encountered by the accountant in developing cost data is provided by a situation in which he must determine the significance of all the variables, including the reported production. In a chemical plant employing an actual process cost system it was found that significant variations in unit cost occurred from month to month. The raw material used represented the largest component of cost, and it varied in quality from month to month. The contract price was a function of the quality, but management was not certain that the price formula was such as to produce a constant cost per ton of finished product. Management needed to know the extent to which the fluctuations in cost represented changes in operating efficiency, to what extent they represented errors in measuring input and output, and to what extent they represented variations in the price and quality of the basic raw material. Such a situation does not lend itself to statistical analysis of past data. Accounting procedures should be developed to isolate the variables, and then statistics and economic theory should be utilized to interpret the results. A norm or standard must be developed in terms of which the amount of each variable can be computed. The standard cost technique

permitted this to be done. The norm used was the amount of finished product to be produced from a given analysis of a ton of raw material. A ton of material of this analysis in turn would require a certain weight of other raw materials, the weight of such materials depending on the weight of certain ingredients in the basis material. If the basic material was of different chemical analysis from the standard, a bonus or penalty price adjustment was made under the purchase contract. An important question was: Does raw material of different analysis from the base analysis actually result in a higher or lower material cost per ton of finished product? To answer this the actual weight of material used should be priced at the adjusted contract price, and this cost compared with the material cost had the analysis been standard. Against such increase or decrease in cost should be charged any change in the cost of the other materials resulting from the variation in analysis. The net variation in total raw material cost determined by this analysis provides management with information concerning the extent to which the bonus and penalty clause of the contract fail to yield a constant raw material cost per ton of finished product. This information should not be affected by variations in plant efficiency.

When one attempts to analyze costs on a monthly basis for a continuous process operation he is confronted with a problem ignored in economic theory—that of determining input and output. The economist assumes the existence of such data, the accountant has to secure it and test its reliability. In the chemical plant under discussion, the isolation of the variables of material cost was based on production and consumption figures furnished by the production men. The application of economic theory (or common sense) to the monthly variances disclosed that some were either impossible or unlikely. For example, raw



material inventory was credited on the basis of ingoing scale weight and the standard cost based on equivalent output. It developed that the equivalent output required more basic raw material than was being weighed in. Query: Were the scales wrong, did the technical men report output improperly, or was the standard efficiency of extraction wrong? Further analysis indicated all three occurred, and steps were taken to improve the accuracy of the scales and the method of estimating output. With these variables eliminated, a coefficient of extraction efficiency could be computed. This was a prime goal of management, but until the other variables could be isolated, no measure of plant efficiency was possible.

#### COST ANALYSIS FOR PRODUCTION POLICY— MULTI-PRODUCT PLANTS

One of the most important analyses of costs for managerial use is that involved in the product-mix problem. The break-even chart and the profit-graph have come in for a lot of attention in recent years. Such charts frequently are constructed from actual monthly or quarterly profit and loss statements. If one has such statements for a period of time during which selling prices, wage rates and material prices did not change, it is possible to run correlation analyses of the relation between dollar sales and dollar profit. If one makes such an analysis of total sales and total profit, he is likely to find that the correlation is poor. It is true that an increase in sales is accompanied by an increase in profit, but the standard error of estimate usually is large and so one cannot predict profit accurately from a given total dollar volume. If one has profit and loss statements on a product group basis, however, correlation analyses of the sales-profit figures will show a higher coefficient of correlation for each product group than for all groups combined. If total product

costing is used, however, the coefficient of correlation between dollar sales volume and dollars of profit or loss is almost certain to be less than 1.0 because the allocation of common overhead cost on any of the usual bases will result in differing unit overhead costs for each product as the proportions of each product changes in relation to the whole. If the accounts are kept in such a way that only direct variable costs are allocated to individual products or product groups, then correlation analysis of the dollar margin of sales over direct cost in relation to the total dollar sales should give a high coefficient of correlation. Even in such an ideal case, however, correlation will not be perfect unless variable unit cost and unit selling price were unchanged for the range of volume experienced.

The difficulties inherent in the mingling of fixed and variable costs are apparent in a type of cost analysis which is becoming increasingly important today—the analysis of operations when several products or product groups are produced and marketed by a firm. The request from management for cost analysis frequently results from what appears to be an erratic relationship between dollar profits and dollar sales. If one applies correlation analysis to monthly data on total sales and profits, it is first necessary to correct for changes in net sales prices and in the price of labor, material and other factors of cost. The fact that selling prices and factor prices change might be responsible for the erratic sales-profit relationship, but usually the erratic behavior will be observed when price changes are not present. If management cannot predict profit for a given total sales volume, it may conclude that efficiency varies greatly from one accounting period to another. Usually the production men state that this did not happen, and frequently they are right. The explanation, of course, is in changes in the product-

mix from month to month. Management is aware of the fact that different products carry different profit margins, but it is dangerous to accept this as the *sole* explanation for fluctuations in profit, for to do so may hide real variations in manufacturing efficiency. It is possible, by statistical analysis, to provide management with data concerning the contribution of changes in total volume, product-mix, and efficiency.

Most firms that produce several products accumulate costs on a product or product group basis and prepare profit and loss statements for each product or group on a monthly or quarterly basis. The application of correlation analysis to the sale-profit data for each product or group usually results in a better coefficient of correlation for each group than is obtained for the total of all groups. Such analysis is useful in discussing with management the problems involved in preparing budgets for the future, and in directing attention to the possibilities of increasing profit by concentrating sales effort on long-margin items. To the writer, however, the most interesting application of correlation analysis of individual products or groups lies in the meaning of a coefficient less than 1.0 but still useful for forecasting. If the coefficient is less than 1.0, attention should be directed to the influence of overhead costs on the unit costs of the separate products.

If correlation analysis were applied when only one product is produced, a straight-line equation would be expected if fixed costs are really fixed for all levels of output, and unit variable costs are constant. The absence of one or both of these conditions, however, should lead to a coefficient less than 1.0 if a straight-line or least-square technique is used. When such a coefficient is found, is it an indication of varying degrees of operating efficiency, or of a non-linear cost function? If such a

question arises with a single-product plant, what about the multi-product plant? The assignment of overhead cost to products on any of the usual bases will produce a fluctuation in unit cost for each product whenever the proportion of products changes even though there is no great change in total unit or sales volume. The result will be a coefficient of correlation less than 1.0. In order to analyze for management the combined effects of changes in total volume and product mix, all but direct product costs should be excluded. In other words, the most significant correlation will be that of dollar sales related to the margin of such sales over direct product costs.

If one correlates total sales of each product with the direct margin contributed, should one secure a coefficient of 1.0? The answer depends in part on the unit sales price. If the unit price is constant for the various periods, and a separate analysis is made for each product, then the total sales curve will have a constant slope and every imperfection in correlation will be caused by variations in unit cost. If direct variable cost is not constant, then correlation will be less than 1.0, and will indicate to management the extent of variations in operating efficiency from period to period. Before concluding that efficiency varies, however, one should analyze the unit variable cost in relation to volume to determine if there is evidence of diminishing returns or of increasing returns. In effect it is at this point that we come to grips with the meaning of efficiency variance in a standard cost system and the economic theory of marginal cost. If a standard cost system is used, efficiency variance is usually interpreted as evidence of good or bad performance and is seldom subjected to statistical analysis. This means that the standard time and standard material are considered as absolute values unrelated to volume. As a matter

of fact, however, this may not be true. Statistical studies of efficiency variance might reveal that they are closely related to the volume of operation. If this is so, then the standard time or material should be a function of volume, and we should use flexible rather than absolute standards.

It is the writer's view that cost accounting would serve the needs of management more effectively if overhead costs were not allocated to products. The need for so-called total product costs for inventories and periodic financial statements can be met by a periodic assignment of overhead costs, but this assignment need not be carried through the cost records.

#### COST ANALYSIS FOR INVESTMENT DECISIONS

The foregoing discussion of the use of correlation analysis in relation to individual products or product groups was concerned with the cost of the finished product. The analysis is most useful in connection with job order production. Continuous process manufacture presents certain problems in relating volume to cost that are not found in special order production. These problems are encountered particularly in estimating what costs will be at a level of output not previously experienced. For example, a firm may have excess capacity in a plant and seek additional markets to utilize the capacity. Suppose that it can acquire a controlling interest in a company presently buying the product in question from another source. How much cash could the firm realize by selling the product to the prospective subsidiary? The answer depends in part on the margin of selling price over out-of-pocket cost for the additional volume, and in part on the profitability of the prospective subsidiary.

It is quite possible that management may not wish to base its decision entirely on the estimate of engineers concerning the marginal cost of the additional out-

put, but may ask for the views of the accountant. Here we have a problem in the derivation of marginal cost from past operating data. Such an investigation sheds a great deal of light on the meaning of both average and marginal cost. As soon as one starts to determine marginal cost he is faced with the question: Are the data for average cost reliable? In plants using a continuous production process, the critical question is: What happens to cost when the level of output is changed? To answer this it is necessary to determine accurately what the output was. It is here that many empirical studies of cost-volume relationships are unsatisfactory because they deal with total plant cost only instead of departmental cost. When output is changed in a large plant, it is impossible for the rate of change to be uniform in each process. In continuous processing, especially in chemical processes, it is necessary to compute the material still in process, and the amount in one process frequently is used to determine the output of several other processes. An error in measuring the material in process will distort the output figures of one or more processes, and yet the error frequently is not detected because the fact that output changed means that a change in unit cost is expected. Unless there is a large error, the change in cost will be attributed to the change in volume and no questions asked concerning the accuracy of the production figures. Most firms using a process cost system compute unit costs on a monthly basis and on a year-to-date basis. The cumulative figures may be used for annual statements and year-end inventory figures to overcome the possibilities of month-to-month errors in inventory quantities, but this practice obscures the very data needed for the determination of marginal cost. In effect, the search for marginal cost may lead to the discovery of fundamental weaknesses in the cost and pro-

duction reports. Suppose, for example, that unit cost and total costs for a period of several months are arrayed in the order of magnitude of production for each department or process. One would expect to find that total cost would increase as output goes up. This is necessary to produce positive marginal cost. But what if marginal cost is negative? This raises questions concerning the reliability of the production figure and the costs. The first inquiry should be directed to the method of computing output, for a change in output usually means a change in inventory in process. An error in computing the quantity of liquid in a tank or the concentration of the solution may result in an "equivalent production" figure that produces the negative marginal cost. If one satisfies himself that production data are reasonably accurate, then the existence of negative marginal cost or even erratic positive marginal cost is an indication of laxness in controlling operating costs. Such analysis may provide the basis for tight standards for the future.

Additional investment should be made if the marginal net return from the investment will exceed the cost of securing the funds. In computing the marginal net return (excess of receipts for the added production over all costs except interest), it is essential that the cost data be subjected to critical analysis, and particularly that the relation between total cost and output be examined in theoretical terms and not just on the basis of "what actually happened." In other words: Does what "actually happened" make sense in terms of the logical possibilities for cost-volume relationships?

#### SUMMARY AND CONCLUSIONS

The foregoing discussion of the accumulation and analysis of cost data for production and investment decisions raises a question about the basic procedure for

accumulating the original cost data. Cost and production data are used for a variety of purposes: valuing inventories; determining profits or losses on individual orders or groups of products or operations; measuring efficiency of production; establishing prices; selecting the best of alternative methods of producing; measuring obsolescence, and many other purposes. No single cost figure is equally satisfactory for all managerial decisions—some decisions require partial costs, others, such as the determination of obsolescence, require imputed cost such as interest. Out of such a list as this, what central fact emerges as a criterion for the accumulation of the initial cost data? The central fact is that some of the decisions of management require a segregation of costs according to the extent to which they vary in total with the rate of output. A corollary of this is that none of the other decisions of management requires that cost and production data be *accumulated* on a basis inconsistent with the distinction between fixed and variable costs. There is a difference between combining fixed and variable costs after they are accumulated, and combining them *in the process of accumulation*.

If we are to distinguish between fixed and variable costs in production or distribution, the place to start is the individual department or production center. In my view it is possible to develop for each factory or establishment a list of common types of cost incurred in all departments. It is inevitable that some types of expense will not be incurred in each department, but this will present no problem, since such costs will be omitted from the statements of such departments. Although broad types of cost apply to all departments, each department may require subclassifications for purposes of control at the department level. Thus *operating labor* in the open hearth department of a steel mill will require different classifications

from that in the structural mill in the same plant. The same may be true of indirect labor, supplies, and other types of expense. Such detailed classification may be provided for with a decimal system of account numbers. The important thing is to prevent the number of major classes of cost from becoming so large that top management loses sight of the forest in the maze of individual trees and brush.

The accumulation of cost data by departments on the basis of fixed and variable costs will permit evaluation of depart-

mental results. If only variable costs are assigned to products, the contribution of each product to total product margin will be logical and not subject to change because of changes in the product-mix. Since most cost analysis centers around volume and product-mix variations in relation to efficiency, the distinction between fixed and variable cost is of prime importance. If this be granted, why can't we exclude fixed costs from individual product costs, particularly in multi-product plants?



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# RATE BASE PROBLEMS PRESENTED WHEN UTILITIES SHIFT FROM RETIREMENT TO DEPRECIATION ACCOUNTING

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WHENEVER a public service commission has before it a case involving the determination of a rate base, it gives, or should give, consideration to a number of factors. First, what property does the utility have at its disposal which is "used and useful" in the public service? Second, among its disbursements, what is the proper amount of operating expenses? Third, what concept of "fair value" should be selected? Fourth, what types of accounting have been carried on in the past and what are the consequences of such practice? The Commission will need to discover whether the utility is following retirement accounting, replacement accounting or depreciation accounting. If depreciation accounting is the present practice, it will want to know whether the depreciation reserve is just adequate, more than adequate or inadequate for the purposes of retiring the property when it is withdrawn from service. If depreciation accounting is now the accepted procedure, it will desire also to learn if retirement or replacement accounting were abandoned at an earlier time. Finally it must ascertain whether a depreciation fund as such exists. Our interest in what is to follow is restricted to only a part of this problem. More specifically, we shall be concerned with the original cost rate base when there is a shift from retirement accounting to depreciation accounting, and then only from the point of view of rate regulation.

## I

What is properly labelled "retirement accounting" is a doctrine of great importance. According to this doctrine no depreciation charges, as such, are set up annually on the books and no estimate is made of the periodic depreciation accrual. The significant point of time, in the view of its advocates, is the period when the asset is withdrawn from service. At this time the original cost of the asset is charged to operating expenses. Specifically the procedure sets up asset accounts to which the cost of all property purchased or constructed is charged at the time it is acquired. These charges remain on the books until property is abandoned and then the original cost of the asset is charged to operating expenses.

In effect an account like "Retirement Expense" is charged when an asset account is credited for the amount of the original cost of the asset abandoned. The scrap value realized, if the asset is sold, is charged to cash and credited to "Retirement Expense." Or if the asset is "junked" in place of being sold, the charge is made to materials and supplies account and the credit to "Retirement Expense" account for the amount of the appraised value of the asset. Of course, the entries may be consolidated with a charge to retirement expense, a charge to cash or to materials and supplies, and a credit to the asset account for the summation of both charges

—for the amount of the original cost of the asset. Under expense accounting, operating expenses of the first period of service of an asset receive the entire load; under depreciation accounting, the charges are apportioned over all fiscal periods; under retirement accounting the last period bears all the burden. This means that when following retirement accounting the utility does not "collect," from the rate payer, for the consumption of its property until retirement date.

A sound original cost rate base for a utility which has practiced retirement accounting is an undepreciated one. The company should be permitted to earn a "fair return" upon the original cost of all of its assets now in service, after making a deduction for the non-interest bearing liabilities. It is true that the percentage of condition of the property shrinks and continues to do so until "it has struck its gait" or until the "seasoned condition" of the property has been reached. And it is true also that the worth of the property at this stage is considerably less than its original cost. Nevertheless, since continuous rate regulation is assumed, and other things are considered equal, the company has been unable to "earn" any accrued depreciation owing to the fact that the public, during the early days of the concern, has been served at too low a book cost. This situation has come about because of an understatement of true operating expenses and a consequent overstatement of net revenue from operations and a resulting reduction in the permitted rates of service, which in reality was not justified. Thus since the falling percentage of condition of the property was not "collected" by the utility, but rather was applied for the benefit of the rate payer, the utility should in all fairness be permitted to earn on its original investment or, as we may say, on an undepreciated rate base. Such a base is ascertained by

inventorying all assets in service, at original cost, and from the summation deducting the non-interest bearing obligations.

It must be admitted that retirement accounting is an unsound and unscientific practice, that the stockholders' investment is impaired, as a consequence of such procedure, and that whenever ultimate dissolution of the property takes place the stockholders stand to lose.<sup>1</sup> Those who favor retirement accounting stress the idea of continuous operating of big property, but observation of street railway, interurban, and ice producing companies shows that complete dissolution is not uncommon and that partial dissolution results frequently in the shift from street cars to buses and from ice manufacturing equipment to frozen food lockers, with unfortunate consequences if retirement accounting has been standard practice.<sup>2</sup> Nevertheless, since the practice of retirement accounting did have, for many years, the approval of public service commissions and the courts, and since the commissions acted upon the accounting results of such practice, an undepreciated rate base under these conditions should be considered sound.<sup>3</sup>

In passing to the other extreme, in which depreciation accounting has been standard practice throughout the entire life of the property, we find the shrinking percentage of condition of the property provided for by a depreciation reserve. Such a reverse is credited periodically with the

<sup>1</sup> William S. Krebs, "Public Utility Depreciation in Its Relation to the Rate Base," *ACCOUNTING REVIEW*, June, 1939, pp. 94, 95.

<sup>2</sup> L. F. Loree, when President of the Delaware and Hudson Railway, expressed the opinion that a vast amount of track, and many railway buildings, throughout the nation ought to be abandoned. *I.C.C. Proposed Report*, Nos. 14700, 15100, August, 1929, p. 13.

<sup>3</sup> Once "the Pennsylvania (Railroad) asked the Commission for a depreciation account for maintenance of way and structures and the Commission refused." Editorial, *Railway Age Gazette*, Vol. 48, No. 10, March, 1910, pp. 514-516. See also *Kansas City Southern Railway vs. United States*, 231 U. S. 423 (1913).

amount of the annual allowance for depreciation—the amount of the currently accruing depreciation—which has been provided for out of operating expense charges and this reserve is charged with the service value (the original cost minus the scrap value) of all property which is retired. With proper handling the reserve should tend to indicate the variation between the percentage of condition of the property and one hundred per cent. The balance of the reserve, in reality, measures the total amount collected from the rate payer as compensation for property consumption and which remains unused for purposes of retirement. Were this unused amount—the balance of the reserve—to be returned to the stockholders, then the rate base should consist of the amount of the investment net, minus the amount of the returned investment. Except for companies possessing wasting assets this is illegal, but the principle, nevertheless, is clear as regards the rate base.

Should the stockholders, to whom the assumed investment has been given, decide to put it back in the company, there is a restoration of their investment to the former level and a restoration of the rate base. Thus the formula for such a base is: the original cost of the original assets, minus the balance of the depreciation reserve, plus the amount of the reinvested assets, minus the amount of the non-interest bearing liabilities. Whenever the reinvested assets are put into a depreciation fund we call the base “undepreciated,” but whenever the investment is in plant the base is labelled “depreciated.” The formula is identical in each instance.<sup>4</sup>

Since depreciation funds are quite uncommon they will be ignored here and the statement made that generally, under depreciation accounting, depreciated rate

bases should be standard. Rate bases in excess of this figure permit a double return on part of the assets and are, accordingly, unfair to the rate payer.<sup>5</sup> Rate bases smaller than this figure are unfair to the utility.

Some utilities follow what may be referred to as retirement reserve accounting. When practiced in its purest form the desire is to equalize the charges to operating expenses from year to year and such procedure accomplishes nothing which is not accomplished by retirement accounting. On large properties operating under retirement accounting there is a definite tendency toward uniformity of charges and nearly complete uniformity of charges can be accomplished by company planning. The railroads have submitted figures to demonstrate this point of view, but as the Interstate Commerce Commission<sup>6</sup> has indicated the figures do not prove the point. However, it should be made clear that the railroads have never desired to bring about uniformity, but have deliberately avoided it for financial reasons. Nevertheless, when careful planning is made, as certain studies have shown,<sup>7</sup> this uniformity can be accomplished. On small property such regularity is not possible under retirement accounting, but fortunately is under retirement reserve accounting and even on large properties retirement reserve accounting accomplishes more easily this uniformity.

In following the procedure operating expenses are charged an equal amount each year (on a growing property they would be increased) with offsetting credits to a retirement reserve. The reserve is

<sup>4</sup> From an original cost point of view.

<sup>5</sup> I.C.C. Report Nos. 14700, 15100, November 1926, p. 305, Appendix A.

<sup>7</sup> James E. Allison arrived at this conclusion after making valuations of a large number of utilities. Only a part of his charts were ever published. See James E. Allison, *In re Theoretical Depreciation*, St. Louis, 1917, p. 21.

<sup>4</sup> William S. Krebs, *Types of Utility Rate Bases Under Depreciation Reserve Accounting*, St. Louis, 1946, Chapter I.

charged for the service value of the property abandoned. And the reserve which may at one time have a debit balance and at another a credit balance, will show a definite tendency to possess a zero balance. The rate base, which is equitable to all parties, whenever retirement reserve accounting is standard practice, is undepreciated. This means that there should be no deduction of the retirement reserve balance, should such balance be existent, in the determination of the rate base. Obviously such procedure is consistent with that stated for retirement accounting.<sup>3</sup>

## II

We now face the interesting problem of what to do when a rate base case appears for a utility which has operated for part of its existence under retirement accounting or retirement reserve accounting, and for part of its life under depreciation accounting. According to this set of facts there will be a depreciation reserve which had its origin at date of shift-over from retirement to depreciation accounting or there will be a depreciation reserve which has superseded a retirement reserve at the date of shift-over and which in the last analysis is a relabeled retirement reserve. In each instance the reserve balance definitely will be inadequate; it will not be sufficiently large to provide for all of the charges on property to be retired in the future. Two important questions are raised: what rate base should be considered equitable to all parties and what provision should be made for the future, under these conditions?

In answer to the first one, it would seem that a partially depreciated rate base would be proper. In making the calculation of the base, the amount of depreciation to deduct is the balance of the reserve

even though this is definitely an inadequate figure. Were the inadequacy the responsibility of the company or had the company brought about this inadequacy because of excessive dividend policies, then the full amount of the accrued depreciation should have been deducted and a fully depreciated rate base should have been found. But according to assumptions, retirement accounting has been accepted as standard practice by the commissions and the commissions, moreover, have given consideration to the figures of "net revenue from operations" or "net operating income" in making their decisions with reference to the permitted rates of service aimed at producing a fair return. In other words throughout the history of the company, because operating expenses have been undercharged and net operating income overstated, the rates of service allowed by the commission have been definitely inadequate in the light of the true facts. It would be highly unreasonable to call for a fully depreciated rate base under these conditions. Only a partially depreciated rate base is fair to the company which has failed to collect full depreciation and at the same time earn a fair return. The deduction of the inadequate reserve provides this type of rate base.

The second question has to do with the procedure which may be considered proper when property is retired from service. To remain consistent with the doctrine advanced above, whenever property is abandoned the charge must be divided. That part of the depreciation on each asset which accrued prior to the date of shift-over from retirement to depreciation accounting, should be charged to current operating expenses, and that part which accrued after that date should be charged to the reserve.

It is proposed at this time to suggest an alternative procedure. Let us permit the utility, for a few years, to increase its

<sup>3</sup> Another type of Retirement Reserve Accounting is discussed later.

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annual allowance for depreciation over and above recent figures, so that in due time the depreciation reserve will become completely adequate in amount. At this time there may be deducted the full depreciation accrual to date, and a fully depreciated rate base established. When property is retired from service from now on the reserve may be charged for the original cost of the asset minus the scrap value.

In the interim—before the reserve reaches a completely adequate level—the rate base continues to be partially depreciated, but each year will fall in amount in proportion to the increase in the reserve balance. All assets retired from service during the interim should be written off against the reserve for the amount of the items in the reserve applicable to the assets in question, and against operating expenses for the remainder.<sup>9</sup>

If our assumptions be modified and it is clear that during the period when retirement accounting was practiced the rates of service permitted were at the same level as if depreciation accounting had been in use (the commission had not kept down the rates of service), then a fully depreciated rate base should be considered standard. Moreover, when property is retired from service after the date of change-over from retirement to depreciation accounting the reserve should be charged only for the amount of depreciation accrued subsequent to that date, and the amount accrued prior to that date should be charged to surplus. And it should be recommended that the utility build up the reserve to just an adequate level by a series of charges to surplus or out of disposition of net income.

Another problem, somewhat similar to this one, has to do with the situation en-

countered when retirement accounting was practiced in the period prior to rate regulation and depreciation accounting was followed thereafter. Here the rates of service, for the most part, had not been set by public authority but by the utility itself. Accordingly, the inadequacy of the reserve, after the shift-over to depreciation accounting is, under these conditions, the responsibility of the company and, as in the previous case, the rate base should be fully depreciated. When property is retired from service the reserve should be charged only for the depreciation accrued since the shift-over date, with surplus taking up the difference. And it should be recommended that the reserve be built up to an adequate level gradually by charges to surplus.

The comments made concerning the shift-over from retirement to depreciation accounting are also applicable where the conventional retirement reserve accounting was the original practice. They need not be repeated.

There is, however, a case involving retirement reserve accounting that demands special consideration. Sometimes a utility, when practicing retirement reserve accounting, increases its charges over the former amounts in order to build up a substantial balance in its retirement reserve. On the assumption that this action meets the approval of the commission and also that the rates of service are set with these conditions in mind, what procedure should be followed? It should be apparent that when the shift to depreciation accounting took place the retirement reserve had in it certain depreciation elements. These elements may be smaller or larger than the reserve balance at the shift-over date because the retirement reserve element, following the conventional procedure, may indicate either a positive or negative character; the retirement reserve by itself may possess either a credit or debit bal-

<sup>9</sup> The legality of such proposal, at present, is in doubt. See Board of Public Utility Commissioners et al. v. New York Telephone Company, 271 U.S. 23; Smith et al. Constituting the Illinois Commerce Commission et al. v. Illinois Bell Telephone Co., 282 U.S. 133.



ance although always tending to show a zero balance.

The rate base at shift-over date may be difficult to determine, all depending upon the completeness of the records. The idea to follow sets up a deduction from the original cost of the assets (net of the non-interest bearing obligations), the amount of accrued depreciation which was provided for in past operations, and the amount credited to the reserve in excess of the normal amount. After the shift-over date the deduction should be for the total amount of depreciation which has been provided for to date out of operating expenses and which remains unused for retirement of property. At all times the base is partially depreciated.

Whenever property is retired from service under these conditions, the reserve should be charged for the amount it is estimated was put into it for the asset in question, and the excess service value remaining should be charged to operating expenses. Moreover the utility, in all fairness, should be permitted to increase its annual charges for depreciation for a few years and until such time as the reserve is sufficiently large to provide for full retirement of all assets. At this time a fully depreciated rate base becomes standard.

Still another set of conditions is encountered. Sometimes the utility may at the outset practice retirement accounting on the majority of its assets, but set up retirement reserves on its larger and more costly assets.<sup>10</sup> Before deciding on what to do, it is essential to ascertain whether the retirement reserves were set up merely to provide greater uniformity in charges and were pure retirement reserves—where the amounts of charges were in total what they would have been under retirement accounting—or whether these retirement reserves were in fact depreciation reserves on

the larger pieces of property.

If one assumes the former to prevail, then an undepreciated rate base should be standard at the shift-over date, with a partially depreciated base standard thereafter. And whenever property is retired, the amount of depreciation accrued on any asset prior to the change-over date should be charged to operating expenses, or to the retirement reserve, whichever is applicable and all depreciation accrued after that date to the reserve. Moreover, a proposal that permission be granted for an increase in the annual allowance for depreciation for a few years is in order and if followed will result ultimately in an adequate reserve balance and a fully depreciated rate base.

If the second assumption is made and the retirement reserves on the large properties are found to be depreciation reserves in reality, then a partially depreciated rate base should be established at the change-over period. Thereafter the rate base should continue partially depreciated, but will be smaller in dollar amount than under former assumptions. When assets that were originally provided for by retirement reserves are retired from service, the entire original cost of the asset, net of the scrap value, should be charged to the reserve, now labelled a depreciation reserve. When assets that were originally provided for by retirement accounting are retired from service, the amount of depreciation which had accrued prior to the change-over date should be charged to operating expenses and that which had accrued afterwards should be charged to the reserve. And the proposal may well be made to allow the utility to increase its annual allowance on these assets for a few years until such time as the reserve becomes fully adequate. From then on the rate base should be fully depreciated, and when assets are retired the entire original cost of these assets, net of the scrap value, should be charged to the reserve.

<sup>10</sup> I.C.C. Report, Nos. 14700, 15100, November 1926, p. 302.

## III

The Interstate Commerce Commission at one time<sup>11</sup> recommended, for railroads, that when the shift from retirement accounting to depreciation accounting on Road Property took place,<sup>12</sup> a reserve be created which, at the outset would be at an adequate level. It recommended that the charge be made to a "suspense debit" that should be set up on the left hand side of the balance sheet and should contain whatever charges were required to build up the reserve to the proper figure. It was thought that a charge to surplus, for this purpose, might create for many railroads, a deficit of sizeable proportions.<sup>13</sup> Property retired from service would be written off by a charge to the reserve for the original cost of the assets net of the scrap value.

The question to be raised here has to do with the ultimate disposition of the "Suspense Debit" account. A number of possibilities exist. According to one, the account may be reduced by a series of charges to surplus, as the I.C.C. proposed, and according to another the account should be written down by charges to operating expenses over a number of years.

If the utility, when practicing retirement accounting, had not been subject to rate regulation, then it would be proper to write off the suspense debit account into surplus, present or future. This concept is based upon the idea that the lack of a depreciation reserve, or the existence of an inadequate reserve, was the responsibility of the company. The company had power to collect adequate depreciation, and failing to do so must suffer the consequences. Or if the collection had been made and

paid out in dividends, the conclusion would be similar.

Likewise had the utility, when operating under retirement accounting, been subject to rate regulation, but had been permitted to charge the same rates of service as if depreciation accounting had been followed, then as before the suspense debit should be written down out of surplus. In all these cases a fully depreciated rate base should be considered standard.

Let us make the assumption, however, that during the period when retirement accounting was practiced, and the utility was subject to rate regulation, that the commission used the excessively large figure for net operating income in its calculation of a fair return and accordingly kept down the rates of service that could be charged customers. It would seem that under these conditions, in all reasonableness, the suspense debit account should be written off in the future and this means operating expenses, not surplus, should receive the charges. Of course, in all cases when property is retired from service, the charge should be made to the reserve for the original cost of the asset net of the scrap value and the investment account should be credited for like amount.

The rate base at the shift-over date will show variations according to circumstances. Had retirement accounting, or pure retirement reserve accounting, been practiced in the past, then the rate base should be undepreciated. Had a retirement reserve existed which had been built up somewhat for safety's sake, the rate base should be partially depreciated. Had there been a retirement reserve set up for the large assets, and this was more than a retirement reserve, the rate base should be partially depreciated. The amount of depreciation to deduct, in each instance, will be the amount of the depreciation element that exists in the retirement reserve at the shift-over date.

<sup>11</sup> I.C.C. Report, Nos. 14700, 15100, November 1926, p. 384 (Finding No. 13).

<sup>12</sup> The shift on Equipment had been made in 1907 generally and completely by 1914.

<sup>13</sup> Apparently the Federal Power Commission advocates that past accrued depreciation be charged to Account No. 414, Miscellaneous Debits to Surplus, Federal Power Commission, *Uniform System of Accounts*, Washington, 1937, p. 86.

Subsequent to this date, the amount of depreciation to deduct is that amount existing in the reserve for depreciation, which was collected from customers and remains unused for retirement. The resulting rate base will be partially depreciated. Whenever the balance in the suspense debit account reaches zero, the rate base becomes fully depreciated. And from now on, as before, retirements should be charged to the reserve for the original cost of the assets net of the scrap value.

The original finding of the I.C.C. having to do with the suspense debit was never put into effect. The railroad companies sought a further hearing, which was granted, and the effective date of order No. 15100 was indefinitely postponed. A new order effective January 1, 1933, made it optional with the carrier to provide for past accrued depreciation by a charge to profit and loss (Surplus).<sup>14</sup> On account of the depression this order was indefinitely postponed and not until January 1, 1943, did the requirement of depreciation accounting on road property become effective. Many railroads had sizeable balances in their depreciation reserves for road property, but other railroads had practically nothing.

According to the plan now in effect reserves for depreciation on road property are required. These reserves are to be credited annually by charges to operating expense based upon scientific estimates of the life of the railway property. No provision is made for past accrued depreciation. Retirements are to be charged to the reserve for the original cost of the asset, for the ledger value, or some substitute value, if original cost is lacking, and in all cases net of the scrap value. The question is raised as to how this plan will function.

It is apparent that depreciation which accrued prior to 1943 and, as well, depreci-

ation which accrues after that date will in effect be charged to the operating expenses of 1943 and subsequent periods. Undoubtedly this is an equitable procedure and the net results are in harmony with our previous recommendations. From the angle of operating expenses no criticism should be forthcoming. However, the treatment of the reserve is unsound. Such procedure is more than likely based upon testimony presented by the telephone companies relating to past accrued depreciation.<sup>15</sup> The expert witness indicated that the procedure of ignoring past accrued depreciation had been satisfactory for the telephone companies, but admitted that the circumstances were exceptional. He had in mind rapidly growing property, and although he recognized that the reserve would never become fully adequate under this procedure, he thought the inadequacy was relatively insignificant and in due time would not be noticeable.

Such a situation does not apply to the railroads. They clearly are not in a period of rapid growth. Consequently the reserve is definitely inadequate. Perhaps no serious consequences may result for a long time, although the possibility of a debit balance for the account should be realized. Nevertheless, for some years to come the public will be called upon to pay too little for its services and later will have to pay too much. A better solution would permit an increased annual allowance for depreciation from now on so that ultimately the reserve may be built up to the proper level. The rate base under present regulations should be partially depreciated indefinitely. Under the proposed procedure the rate base will be partially depreciated for some time to come, but ultimately may become fully depreciated.<sup>16</sup>

<sup>15</sup> *Ibid.*, pp. 456, 457.

<sup>14</sup> I.C.C. Report, Nos. 14700, 15100, July 1931, p. 459 (Finding No. 11).

<sup>16</sup> The term "rate base" is used commonly for utilities, but when railroads are under consideration the

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In conclusion, the comment should be made that the practice of retirement accounting, carried on before the inception of depreciation accounting, markedly affects the setting of a rate base for a utility. Principles which are sound, under these conditions, would be definitely unfair had depreciation accounting been prac-

term "valuation" is more common. It is applied to the Act of 1913, the one of 1920, and the one of 1933. See W. Z. Ripley, *Railroads—Finance and Organization*, p. 336; D. P. Locklin, *Economics of Transportation*, pp. 265, 418; See also I.C.C. Valuation Reports, *Texas Midland Railroad*, pp. 4 ff.

ticed at all times. Moreover, the procedure to follow when property is retired from service varies considerably according to whether depreciation accounting has, or has not, always been followed. Rate base and retirement procedure are both highly complicated. To be sound they must be made to harmonize with all the conditions which have existed throughout the long history of the utility. Although definitely true, it is entirely beside the point to say it would have been better had depreciation accounting always been practiced.

# RECENT DEVELOPMENTS IN ACCOUNTING THEORY AND PRACTICE\*

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THE FACT that I am billed to make "an appraisal of the developments in accounting theory and practice" might suggest that specific developments are either obvious or have been identified. I feel sure there is general agreement that developments, as such, are so varied and interwoven that specific ones are not obvious. Further, I am unaware of any itemization of the developments which have occurred. The nature and direction of my efforts here, therefore, might better be labeled as "bases of appraising developments in accounting theory and practice."

Although there is likely general agreement as to some classification of the area in the accounting field of knowledge, the recognition and classification of any developments is somewhat a personal thing. Because of the lack of any specification of developments which has come to my attention, I have taken license to classify the areas in which I would expect developments to be taking place and I have, more particularly, observed some bases and criteria for developments which have seemed obvious to me.

## THEORY AND PRACTICE

### CONTRASTS, COMPARISONS, AND MEANINGS

By way of a preliminary, it should be noted that any presentation of the points of view of both a practitioner and an academic man should not imply a conflict. Ideally, any disagreement should amount to more than differences of opinion as to the extent that theory should be applied to practical situations. Further, agreement

as to what constitutes sound theory should imply no more than comparable ability to think clearly and accurately. It is only natural to expect, however, that the more attention one gives to a subject the better should be his ability to think it through, and improvement in this direction should make his theory regarding such subject matter less vulnerable to error and therefore reduce the need for any revision.

The best theorists are not only willing to admit, but also they contend, that theory and practice are not in opposition one to another. I think the same might be said for the best practitioners. Thus a word about the meaning of accounting theory would seem to be in order.

A critical analysis of practice is not the only basis for a good theory. Nor must theory be *completely* applied to a practical situation in order for it to be considered *good* theory. Mr. Paton, who is one of our leading theorists, identifies three *sources* of theory as "[1] an appraisal of the purposes of accounting, [2] an examination of the milieu in which accounting has its being, and [3] a critical analysis of the nature of accounting practice."<sup>1</sup> A body of thought which may be developed from accounting practice and which is logical in all respects may be said to be *derived* largely from practice. But it must be compatible with the purposes of accounting and it must not be in controversy to other aspects of accounting. Thus, good theory, although finding some source in

<sup>1</sup> William A. Paton, *Recent Developments in Accounting Theory and Practice* (Soldiers Field, Boston: Harvard University Graduate School of Business Administration, Bureau of Business Research, 1940), p. 1.

\* This paper was presented at the 1949 meeting of the Pacific Coast Economic Association.



practice, should especially *provide* a framework for acceptable practice. Any accounting theory which cannot be expected to lead to good practice is indefensible, for it seems appropriate to hold that logic and expediency seldom should be at odds.

In order for us to appraise what might be identified as developments in accounting practice, we should have in mind the features, characteristics, or criteria of both good theory and practice. As has been emphasized, acceptable practice must conform to the framework set up by theory.

Obviously all expressions of accounting thought do not fall into the category of theory. Moreover, all expressions of accounting theory do not fall into the category of *good* accounting theory. As further background for any appraisal of developments in theory, let us enumerate some features or criteria of good theory. The following are suggested:<sup>2</sup>

1. Theory should possess the attributes of clarity, orderliness, purpose, and pattern.
2. Theory should be in harmony with observable and acceptable (perhaps objective) factors and conditions.
3. Theory should reflect impartiality and should exclude individual bias.
4. Theory should reflect consistency in thinking.
5. Theory should contain some perspective for purposes of formation.

Any expression of the basic propositions, assumptions, concepts, standards, principles, doctrines, and policies relating to accounting which have been either improved upon or proposed recently may be properly identified as developments in accounting theory.

Before entering into a discussion of developments in accounting theory and practice which have taken place in recent times, it seems appropriate at this time to set forth, as briefly and simply as

possible, some definition of terms which, it is hoped, might be acceptable to all parties. I hasten to recognize the difficulty in fully realizing such fond hope, but trust that *some* achievement is possible.

In regard to the term "accounting theory," in which developments are being observed, the following definition is offered

Accounting theory is a body of accounting thoughts which are logical and coherent and concerned with the truth about basic economic facts. It accomplishes an understanding of the nature and purpose of the phenomena involved and their effect and functions.

Even though there is likely to be some lack of indorsement for such a definition, there should be even less disagreement with the following definition of "accounting practice:"

Accounting practice is the application of accounting theory to existing situations. The degree to which the theory finds expression should vary only in terms of the effort and cost of giving expression to the theory and the benefits to be achieved thereby.

#### DEVELOPMENTS—NATURE AND EVIDENCES

"Developments" in accounting theory and practice refer, primarily, to the degree to which accounting theory and practice is disclosed and applied. Perhaps it is more important to consider such developments as referring to the application to practice of latent theory, the discarding or revision of old theory, or the evolution of new theory. In any case, the *existing* theory would be available for continued application in practical situations to the extent considered appropriate.

Common ground should be sought on one more point before proceeding too far with a discussion of observed developments. This point consists of a consideration of the "evidences" of developments that may have taken place. The academic man should be alert to every expression of accounting thought, whether it be in oral or

<sup>2</sup> *Ibid.*, p. 1.

written form. And in order to be able to appraise such expression of opinion, he should be fairly familiar with the theory or science of methods, and grounds or foundations of knowledge, and with special reference to their limitations and validity. A practitioner, on the other hand, is not generally expected to sift through this more extensive body of expressed material. He is more likely to confine his attention to points of view which have been thought through carefully and perhaps tested and published, rather than with controversial ones which have not advanced beyond the stage of proposal and debate. This is not to say that any person cannot enter both the province of the academician at one time and that of the practitioner at another time.

An indication of evidences considered important by the practitioner may be noted by reference to the last annual meeting of the American Institute of Accountants, in a technical session devoted to "Progress in Theory and Practice." At this session attention was confined almost entirely to Accounting Research Bulletins and Statements of Auditing Procedure, implying that progress should be measured in terms of these evidences. To a considerable extent progress might be measured by such publications, for they should represent the culmination of much accounting thought. The reasoning which serves as the foundation for these Bulletins is a fertile field in which the theorist loves to tread and, in so far as he proceeds wisely, it might be said that his theory on any phase of accounting is complete when expressed and generally accepted. However, it must be acknowledged that the Bulletins *may not* be thoroughly logical. That is, allowances may be made for continuation of illogical but popular concepts and methods. Contrawise, Bulletins may reflect sound reasoning but may be too much at variance with practice that is

based solely on expediency and tradition.

It might seem that a true theorist would cease to function, at least temporarily, on a phase of accounting knowledge which has found expression in the form of such a publication. However, the fact that so much disagreement sometimes exists regarding the reasonableness or the practical application of these dicta suggests that perhaps in many instances theory may have given way to expedience, or vice versa. Those Research Bulletins which are pertinent and which find little opposition from a rational point of view, it must be conceded, are supported by sound theory and represent important evidences of developments in both theory and practice.

Perhaps many more bulletins might have been issued on various subjects if the practitioner were always ready to accept sound theory and apply it to practical situations in the face of contrary tradition. A potent area for development is that in which practice *is* based on tradition, which is *not* supported by logic, or is based on expedience alone.

#### IDENTIFICATION OF AREAS FOR DEVELOPMENTS

I have presumed that areas into which we may look for developments, or in which observed developments may be classified, are as follows: (1) terminology, (2) basic assumptions and concepts, (3) identification of items to be included in the various reports, (4) determination of amounts at which the items should be stated, and (5) form and arrangement (including classification) of the items and their amounts.<sup>3</sup> The development of standards aids in the solution of problems connected with terminology, items to be included in specific reports, the "pricing" or "valuation" of these items, and the

<sup>3</sup> A treatment of this fifth area is omitted in this paper because of time and space restrictions.

details of the reports which include these elements.

#### *Developments in terminology*

Accounting has sometimes been referred to as the language of business but, far too often, accounting has not been expressed in a completely understandable way. This short-coming is widely recognized, and readily admitted by accountants themselves. One main reason for this deficiency is not traceable to writing style or even phraseology but, rather, merely to terminology problems. Thus, when considering developments in accounting theory and practice we can hardly ignore the problems related to terminology, and in accounting thought and literature this phase of accounting invariably receives considerable attention. Moreover, it will continue to do so until a solution is forthcoming. Fortunately, some evidence of a new approach toward a solution (as will be noted later) has finally come to light and perhaps terminology difficulties will not always be such a deterrent to the progress needed.

In one of the many attempts to attack the terminology problem, the American Institute's Committee on Terminology suggested that words and phrases which must be considered in an attempt to clear up the terminology difficulties fall into one of four classes:

1. Words and phrases which are generally considered fundamental in accounting language, but which are used in accounting in a different sense than that attached to them in non-accounting uses.
2. Terms developed by accountants which are purely technical and, therefore, unfamiliar to the general public.
3. Words originating in such other fields as law and business, but with which the accountant is frequently concerned.
4. Terms used in specialized accounting activities such as auditing with a meaning

distinct from that used in general accounting.<sup>4</sup>

It should be noted that the difficulties encountered by accountants in conveying their information for general consumption are usually traced to the first of these four categories, i.e., words which though having a general connotation in non-accounting usages have been given one or more special meanings in accounting. An early appeal on the part of those who concerned themselves with terminology problems seems to have been to effect a uniform definition of such terms as used in accounting. In addition to uniformity, preciseness also was to be emphasized. In other words, they seem to have been particularly concerned with adapting to accounting use a term having other uses and different meanings outside of accounting. Definitions were proposed which not only varied considerably with the personnel who composed them, but also which varied somewhat as they were revised by the same personnel. Continuous misunderstanding was achieved! Alternative solutions might have been to either coin new words or express the idea through the use of old words which lend themselves to common understanding.

As an example of the general field of terminology difficulties, attention may be given to developments in the use of the term "surplus." Here is a word which in general usage has retained its original meaning as found in the Old French—an over-plus, excess, residue. And despite its extended use in accounting, and even the fact that the accounting implications have found their way into the general dictionaries, confusion has persisted. The continued use of the term by accountants, despite their awareness of its being frequently misunderstood, may be explained

<sup>4</sup> American Institute of Accountants, "Report of the Committee on Terminology—Mid-Year, 1940," *Accounting Research Bulletin*, No. 7 (Special) (New York: American Institute of Accountants, Committee on Accounting Procedure, Nov., 1940), p. 52.

by its dual appeal. First, the simplicity of the term, even with the use of qualifying adjectives, finds favor. Another appeal, which is not revered by accountants as much as by those in some other professions is the continued use of a technical language sacred to the profession on the presumption that it lends dignity and exclusiveness. To those who are striving to make progress with their profession, this latter feature has little attraction.

An appeal to clarify the meaning of "surplus" through restricted usage was suggested by one Committee on Terminology in its statement: "The objective of the Institute in this case should be clearly to make the significance of the word as used in accounting more precise and uniform."<sup>5</sup> This, however, would not assure its understanding to non-accountants. Moreover, endless improvements in accounting definitions of the term would have but limited effect on the general public. The traditional approach of those attempting to compose a generally acceptable definition has failed, as have other attempts to unify definitions. Definitions of "surplus," as have other definitions, seem to have varied somewhat with the personnel who composed them. Following the failures to prescribe a generally acceptable definition for "surplus," the suggestion was made to consider the discontinuance of the use of the term. Despite their probable convictions, the Committee on Accounting Procedure published, without approval, a recommendation of the Committee on Terminology regarding discontinuance of the use of the term "surplus." Reluctance to approve a proposal of doubtful acceptability apparently seemed appropriate. Notwithstanding the power of tradition and the restraint of the Committee on Accounting Procedure, discontinuance of the use of the term "caught on." Finally, by the time the Committee

on Accounting Procedure did undertake to "approve as an objective" the discontinuance of the use of the term, in December 1949,<sup>6</sup> a strong and definite trend in that direction was already indicated by the profession. For example, in their 1948 reports nearly five times as many corporations were refraining from using the term as in 1946 and these constituted nearly 20% of the sample. The number complying is increasing at an increasing rate and it is presumed that eventually the Committee on Accounting Procedure may take a bold stand on that matter and assign the term to limbo.

Another prominent focus in terminology difficulties is found in the use of the term "reserve" in connection with contra accounts for receivables and plant assets. It was about fifty years ago that Lisle advised that "Reserves for Bad Debts and Depreciation are better termed Allowances for Bad Debts and Depreciation. . . ."<sup>7</sup> A few purists have carried forward the idea that such use of the term "reserves" should be discontinued. The Committee on Terminology finally took up the cudgel late last year (October 1948), through Accounting Research Bulletin 34, in recommending a restricted use of the term. Of sample corporations, 35% do not use the term "reserve" in connection with bad debts allowances and 33% do not use it in connection with depreciation accumulated. These are evidences of desirable developments in the use of this term and should be encouraged.

The pattern followed in dealing with the term "surplus" might well be applied to other terms of similar character. Also, these terms which are primarily of an accounting nature should be used in a com-

<sup>5</sup> "Discontinuance of the Use of the Term 'Surplus' is Recommended: Complete Text of Accounting Research Bulletin No. 39," *Journal of Accountancy*, December, 1949, 480.

<sup>7</sup> George Lisle, *Accounting in Theory and Practice*, rev. (Edinburgh: William Green & Sons, 1909), p. 118.

<sup>6</sup> *Ibid.*, p. 54.



mon sense by accountants. A restriction in the use of these terms, as suggested in the case of "reserves," should be readily subscribed to by all who have influence in accounting circles in order that this type of terminology problem may also be remedied.

Developments in terminology, as evidenced by such sources as the Institute's annual analysis of 525 corporate reports, should be studied and, when logical, they should be encouraged. A decline in the use of the title "Profit and Loss Statement," or variants thereof, is a minor example. A considerable and increasing majority do now use such terms as "profit" or "loss" in the title of the operating statement. An intelligent man should be willing to admit that tradition sometimes becomes a poor excuse for resisting change.

It should be seen that progress in the development of most phases of accounting is hampered because of the pervasion of terminology difficulties into the various phases of accounting. Many of the difficulties of promoting a general adoption of statements of concepts, standards, and procedures are found in objections taken to words and phrases used. I suppose that to some extent we face the same problem that Alice did in Wonderland when Humpty Dumpty said: "When I use a word it means just what I choose it to mean—neither more nor less." Alice had the right answer in her response: "The question is, whether you *can* make words mean so many different things." But Justice Holmes seemed to side somewhat with Dumpty when he wrote: "A word is not a crystal, transparent and unchanged; it is the skin of a living thought, and may vary greatly in color and content according to the circumstances and the time in which it is used."<sup>8</sup>

The terminology problem is always with us and will prove to be less of a barrier

only when pronouncements issued by authoritative bodies leave less opportunity for critics to take issue with words, and when the critics try to perceive the thoughts intended without too much airing of alternative meanings of specific terms.

#### *Basic assumptions and concepts*

Statements of assumptions, concepts (and standards) are the core of accounting thought and identify an area where we should expect to find important developments taking place. The appropriateness of any standards selected can be judged only in terms of the concepts on which they are founded and of the purposes and objectives which they serve. Such standards can then become useful in carrying out the functions of accounting.

Much of the criticism leveled at published statements of concepts and standards is in the area of terminology. Words and expressions often irk the readers either because the meaning given or implied is unsavory or because the meanings cannot be directly deduced. Examples of these are: "recoverable cost," "fair market value," "established selling price," "marked permanent change in price levels," "preparation of statements embodying the point of view of the stockholder," "current expenditures of cash and assets disbursed," "contracted shares," etc.

Important developments with respect to these formal statements of concepts and standards are not confined to preliminary opinions which are expressed as "feelers" by committee members prior to the publications of the statements, or to the publications of the statements themselves, but also may be found in the reactions expressed by readers.

The efforts of the Executive Committee of the American Accounting Association to codify concepts and standards are most noteworthy in this respect. Yet, each of

<sup>8</sup> *Towne v. Eisner*, 245 U.S. 418 at 425 (1918).



the three formalized statements which have been published—1936, 1941, 1948—were presented with reservations. It was readily admitted that each statement was not expected to be "the final word" and it was clearly emphasized that the study is a continuous one. Each of the three statements has drawn "fire" and the antagonists and protagonists have rebutted both mildly and fiercely. Now it is hoped and expected that additional and improved revisions will be forthcoming with some degree of regularity and frequency.

The Committee on Accounting Procedure of the American Institute of Accountants has likewise made attempts to codify concepts and standards, but their Bulletins have not consisted primarily of statements of concepts. The Bulletins are more in the nature of statements of standards rather than concepts. In connection with each Bulletin there is usually some attempt to explain the thinking of the Committee in arriving at its conclusions, and to an extent this may be considered a statement of the Committee's concepts. But a formal compilation by the Committee of its basic assumptions and concepts would aid in the developments of standards, as well as an appraisal of them. The best single attempt to date to codify standards, in my opinion, is found in the monograph by Paton and Littleton.<sup>9</sup>

Attention to some concepts has lagged while consideration of others has been fairly active. Some concepts which have *not* been actively treated recently suggest such unsettled questions as: (1) To what extent, if any, should we be shackled by the legal point of view as to the composition of the entity? (2) With respect to the continuity of a firm, are actuarial data applicable in deciding the expected future life of a firm in terms of the age attained?

Other concepts receiving variable amounts of attention suggest the following questions: (3) Are both the proceeds and outlay of a transaction expressible in the same amount of dollar units and is such amount unchangeable? (4) Is the ability of costs to cohere and yet be regrouped an enduring thing, related to something specific, reclassifiable as may seem appropriate, and recapturable through revenue? Do inventories, for example, have "value" or are they costs held in suspense? (5) Should we measure the income residual in terms of units of output, implying that costs do cohere completely; or in terms of time periods; or both?

Only after agreement is reached on assumptions and concepts, can it be expected that standards of reporting will be properly developed and accepted. Those who participate in the development of standards should be cautious to see that they are systematic, coherent, impartial, impersonal, and compatible with observable, objective situations. It is important to realize that standards should not be derived from existing definitions, policies, practices, and legislative and judicial dicta but, rather, these things should *conform* to standards. Unfortunately, development is likely to be the wrong way.

"A scheme of accounting standards should consist simply of an explanation of what accounting attempts to tell the interested parties through the medium of reports of financial position and results of operations."<sup>10</sup> There are considered under the headings of (1) items to be included, (2) the amounts at which these items should be reported, and (3) the form and arrangements of the items.

The broadening social implications of the operations and financial status of a business enterprise seem to be generally imposing upon accounting an increasing obligation to report accurately not only

<sup>9</sup> W. A. Paton and A. C. Littleton, *An Introduction to Corporate Accounting Standards* (American Accounting Association, 1940).

<sup>10</sup> *Ibid.*, p. 5.

to those who share in the profits, but also to all who share in the revenue of the business. These include (1) suppliers of goods, (2) labor, (3) managements, and (4) government; as well as (5) all classes of investors. Each of these recipients of the revenue is more or less interested in knowing what his respective contribution is and the amount of revenue resulting therefrom. Or, put in a more mercenary way, those who provide the means for the revenue seem to be gradually assuming the right to know what their relative share should be.

In some instances, at least, the distribution is viewed from quite another angle; that of the customer who provides the revenue of the business. He may come to claim information as to the respective rights of those who participate in the revenue that he provides or, even, the amount that he should be expected to provide. This philosophy might suggest inquiries as follows: What is the function of the income statement? What is income? Are there different kinds of income? If so, what kinds are there? Is it possible and practicable to determine the most useful kind of income to report? These and other inquiries stated above are all related to assumptions and concepts, and point up the need for development.

#### INCLUSION OF VARIOUS ITEMS IN REPORTS

The question as to whether an item should be included in the income statement, the balance sheet, or neither is a difficult one to treat. A dim view is certain if one is to be influenced by the conclusions of Mr. William W. Werntz who, as recently as two years ago, said: "There now exists no generally agreed upon accounting criteria as to when an item may properly be excluded from the income statement."<sup>11</sup>

The situation has been slightly alleviated by Bulletins 32 and 35. The latter recommends the elimination from the income statement of all charges and credits associated with (1) general purpose contingency reserves, (2) reserves for inventory losses related to prior or future (but not current) periods, or based on unauthorized pricing procedures, (3) extraordinary items which might distort current income, and excessive fixed asset costs and appropriations in contemplation of replacements at higher price levels. Even prior to the issuance of Bulletin 35 some limitation was offered to the items to be reflected in the computation of net income. Bulletin 32 is reasonably specific in this regard even though it favors the "cluttered" rather than the "clean" statement of earnings retained in the business, and favors it as a statement separate from the current income statement. In order to decide whether an item and its amount should be reported in the current income statement, one must still decide whether or not the amount is "material" and, if so, (1) whether it is related to operations of prior periods, (2) whether assets sold were acquired for resale and, if so, whether the sale is unusual, (3) whether any losses result from an unusual hazard with such hazards not usually insured against, (4) whether the write-off is for an intangible, and (5) whether the amount is for discount or premium on bonds payable which are retired or refunded before maturity. The specificity of the items are more acceptable than the reasons offered.

The fact remains that it is difficult to determine whether certain items should, without reference to the amounts involved, be included in or excluded from the income statement. Also remains the question as to the significance, if any, of cumulative net income figures. The problem of balance sheet items to be

<sup>11</sup> William W. Werntz, "Recent Developments in Accounting," *ACCOUNTING REVIEW*, April, 1947, 140.

included is neither so great nor pertinent and is by-passed here.

#### *Amounts to be reported*

The problems connected with the amounts to be reported in financial statements are both numerous and varied. But, as for many problems, any solution must properly be arrived at after reference to basic concepts.

Before one considers the amounts to be reported for items to be included in the income statement and the balance sheet, the function and purpose of such statements should be reviewed. Some attention seems to have been given recently to the purposes of accounting. But a great deal more needs to be said. Although it has been some time since the income statement emerges as the main focus of accounting, additional attention needs to be given to the purposes of the statement as well as the role served by the other important statements such as the "source and application of working capital (funds)" statement. In condoning variations in the income statement when prepared for parties having differing interests, it is particularly important to limit the variation to greater or less detail, or even classification, but not indorse any variation in the amount to be presented for any item.

The determination of any particular amount to be shown for an income statement item should be conditioned by the function to be served by that statement, as has been claimed. Objective judgments should not be confused with reporting objectives. The so-called "theories of profits" are, in a sense, *expressions* of the alternative objectives. And in reviewing and appraising them we might be reminded of Professor Schmidt's three major premises which have been proposed as aids in making a logical analysis. He cautions that, when choosing between any two

methods of accounting, that method should be selected which (1) more clearly portrays or describes the objective situation, (2) presents the facts in a manner which tends to lead to the wiser management decisions, (3) tends to lead to the more desirable social-economic results.<sup>12</sup>

Several years ago Professor Littleton presented a defense for the use of original costs and, in so doing, noted the evolution of a profit theory involving original costs. He also recognized the existence of one contrasting theory—that of providing for replacements when determining net income.<sup>13</sup> Professor Mackenzie is the latest to defend original costs as the proper data to use in determining net income. In so doing, he seems to recognize the existence of four other theories. These may be briefly identified as means of determining net income through (1) the use of market values each year for all assets except cash and receivables, and with all changes being reported in the income statement—no distinction being made between realized and unrealized gains or losses, (2) the use of replacement costs, especially for fixed assets, and with depreciation being determined therefrom, (3) the use of index numbers to convert each balance sheet and income statement item on a relative purchasing-power basis, and (4) the use of current costs (including the recognition of Professor Graham's "equivalent replacement" notion)<sup>14</sup> as the proper amount to be matched against current revenue; sanction being conditioned by the fact that this procedure approximates the purchasing power idea and, hence, the

<sup>12</sup> Leo A. Schmidt, "Practical Uses of the Device of Formal Logic in Accountants' Daily Work," *Journal of Accountancy*, November, 1949, 378-87.

<sup>13</sup> A. C. Littleton, "Contrasting Theories of Profit," *ACCOUNTING REVIEW*, March 1936, 10-15.

<sup>14</sup> Willard J. Graham, "The Effect of Changing Price Levels Upon the Determination, Reporting, and Interpretation of Income," *ACCOUNTING REVIEW*, January, 1949, 15-26.

reflection to a satisfactory extent of real income.<sup>15</sup>

Perhaps all of these alternatives force us to an even more basic question: Should the net income, however determined, reflect an amount accruing to the shareholders and which may be distributed as dividends or may be retained and invested for their benefit, directly or by way of stock dividends? To do just this certainly would not mean that such reports were prepared primarily for shareholders. Such results would seem to be what governmental units are interested in, also labor

and prospective investors. Moreover, if management is not expected to be able to forecast price changes (which is generally conceded), a separation of the effects of price changes which have taken place would permit an appraisal of managerial efficiency.

Variations in the pricing of cost of goods sold and ending inventories, or for depreciation and partially depreciated fixed assets—as well as the problem as to whether the balance sheet amounts should be conditioned by the amount charged to operations, or vice versa—must be considered in terms of social-economic results, aids in the making of managerial decisions, and relative objectivity.

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<sup>15</sup> D. H. Mackenzie, "Contemporary Theories of Corporate Profits Reporting," *ACCOUNTING REVIEW*, October, 1949, 360-68.

# THE REALITY TEST IN FAMILY PARTNERSHIPS

J. H. LANDMAN

*Sher, Roeder & Landman*

THE UNITED STATES Supreme Court in the recent *Culbertson* decision<sup>1</sup> has unequivocally declared that the alternate tests of original contributed capital and vital services as supposedly set up in its earlier *Tower* and *Lusthaus* decisions<sup>2</sup> are not decisive but only circumstantial evidence in determining the tax legality of family partnerships. The true test is the realism of the factual situation. It said in part:

"The question is not whether the services or capital contributed by a partner are of sufficient importance to meet some objective standard supposedly established by the *Tower* case, but whether, considering all the facts—the agreement, the conduct of the parties in execution of its provisions, their statements, the testimony of disinterested persons, the relationship of the parties, their respective abilities and capital contributions, the actual control of income and the purposes for which it is used, and any other facts throwing light on their true intent—the parties in good faith and acting with a business purpose intended to join together in the present conduct of the enterprise."

This decision has engendered much discussion as to whether the Supreme Court reversed, modified or merely clarified the qualifying factors of a tax-valid family partnership. In truth, there is as much authority in the earlier *Tower* as in the *Culbertson* case for the reality test. For some unknown reason, except perhaps the psychology in the fact that the *Tower* case uses the alternate original capital and the vital service tests as illustrative evidence, the Treasury, the public and the

courts have accepted them almost universally as conclusive criteria. It is comforting to know that the three-year doubt as to the validity of these exclusive alternate standards has been finally dispelled in favor of the more embracing reality test.

The Supreme Court in the *Tower* case had this to say as to the propriety of a family partnership for federal tax purposes. Decide for yourself as to the effect of *Culbertson* on the former *Tower* case.

"There can be no question that a wife and a husband may, under certain circumstances, become partners for tax, as for other purposes. *If she either invests capital originating with her or substantially contributes to the control and management of the business, or otherwise performs vital additional services, or does all of these things she may be a partner as contemplated by U.S.C. Sections 181, 182.* The Tax Court has recognized that under such circumstances the income belongs to the wife. A wife may become a general or a limited partner with her husband. *But when she does not share in the management and control of the business, contributes no vital additional service, and where the husband purports in some way to have given her a partner-interest, the Tax Court may properly take these circumstances into consideration in determining whether it is real within the meaning of the federal revenue laws.*"

(Underscoring supplied.)

At any rate, it is important to remember that the *Culbertson* reality test is retroactive in its application. Consequently, consideration might be given to the desirability of court reargument or appeal of disapproved family partnerships. Those still being processed in the Bureau of Internal Revenue are already being accorded more favorable treatment. Prospectively, except for non-interspouse situ-

<sup>1</sup> *Culbertson*, P-H Par. 47,168 Memo. T. C., reversed by (C.C.A.-5), 1948, 168 F(2d) 980, which was reversed by U.S.S. Ct. No. 313, June 27, 1949, 69 S.Ct. 1210.

<sup>2</sup> *Tower*, 327 U.S. 280 (1946); *Lusthaus*, 327 U.S. 293 (1946).



ations such as child partners, family partnerships take on little significance at least to the extent that tax splitting on a fifty-fifty basis can be achieved by married folk for the year 1948 and thereafter by merely filing joint returns.<sup>3</sup>

The short history of the Culbertson reality test reflects a willingness on the part of the courts to give effect to this doctrine.<sup>4</sup> Yet except for clarification as to the qualifying tax factors of a family

partnership, the Culbertson decision and those stemming from it contribute little that is new to the body of tax law on the question.

#### ITS NATURE

A partnership agreement may be tax-valid even though it is otherwise illegal because it is oral or because it embraces a minor child.<sup>5</sup> On the other hand, it is not beholden on the Treasury to recognize a family partnership because O.P.A. and

<sup>3</sup> Section 12 I.R.C.

<sup>4</sup> *Taxpayers' Judicial Victories Since Culbertson*  
Wenig, Circuit Court of Appeals, District of Columbia, July 18, 1949, reversing Par. 47, 338 P-H Memo T.C.  
Atkins, U.S.D. Ct., W.D. of La., September 30, 1949.  
Schnitzer, 13 T.C. No. 8.  
Snow, Par. 49, 180 P-H Memo T.C.  
Campbell, Par. 49, 198 P-H Memo T.C.  
Delchamps, 13 T.C. No. 39.  
Middlebrook, 13 T.C. No. 54.  
Depue, 13 T.C. No. 62, one dissent.  
Wolkowitz, Par. 49, 212 P-H Memo T.C., split decision.  
Cardone, Par. 49, 223 P-H Memo T.C., split decision.  
Harmon, 13 T.C. No. 53, two dissent in a split decision.  
Theurkauf, 13 T.C. No. 70, six dissents.  
Huff, U.S.D. Ct. W.D. of Ky., August 2, 1949.  
Cooke, CCA-6, October 17, 1949, affirming Par. 72,551 P-H Memo T.C.  
McPhillips, U.S.D. Ct., S.D. of Ala., July 30, 1949.  
Greenberger, CCA-7, November 7, 1949, reversing Par. 48,102 P-H Memo T.C.  
Ruppel, CCA-7, November 16, 1949, affirming Par. 72,554 P-H Memo T.C.  
Crossley, U.S.D. Ct., N.D. of Ill., November 17, 1949.  
Kiyono, Par. 49, 252 P-H Memo T.C.  
Wolf, Par. 49, 256 P-H Memo T.C.  
Matuszewski, 13 T.C. No. 96.  
Haber, Par. 49, 269 P-H Memo T.C.  
Trapp, U.S.D. Ct., W.D. of Okla., December 2, 1949 (for 1941).  
Green, U.S.D. Ct., N.D. of Texas, October 11, 1949.  
Beasley, U.S.D. Ct., M.D. of Tenn., August 5, 1949.  
Morris, 13 T.C. No. 127.  
Eisenstadt, ¶49,283 P-H Memo T.C.  
Mundo, U.S.D. Ct., E.D. of Ark., W.D., November 1, 1949.  
Snyder, U.S.D. Ct., E.D. of Pa., December 8, 1948.  
Milenz, ¶50,012 P-H Memo T.C.  
Vaughan v. Carey, U.S.D. Ct., N.D. Ohio, E.D., December 13, 1949.  
Charles William Vaughan v. Carey, U.S.D. Ct., N.D. of Ohio, E.D., December 13, 1949.  
William A. Lamb v. Smith, U.S.D. Ct., E.D. of Pa., January 12, 1950.  
Johns, C.C.A.—5, March 2, 1950, reversing ¶48,201 P-H Memo T.C.  
Holcomb, U.S.D. Ct., W.D. Texas, February 20, 1950.  
Theurkauf, C.C.A.-2, March 13, 1950, refused to review 13 T.C. No. 70.  
King, U.S.D. Ct., D. of Kansas, November 15, 1949.  
Apt, U.S.D. Ct., N.D. of Iowa, March 25, 1950.

#### Treasury Victories Since Culbertson

Trapp, CCA-10, September 14, 1949, affirming 73 F. Supp. 385.  
Cobb, 13 T.C. No. 66, one Dissent.  
Barrett, 13 T.C. No. 71.  
Morrison, CCA-2, October 26, 1949, affirming 11 T.C. 696.  
Harkness, 13 T.C. No. 129.  
Feldman, 14 T.C. No. 3.  
Ardolina, ¶49,297 Memo T.C.  
Caporaletti, ¶50,006 P-H Memo T.C.  
Britt, ¶50,013 P-H Memo T.C.  
Yiannias, C.C.A.-8, February 14, 1950, affirming ¶49,111 P-H Memo T.C.  
Merritt, 14 T.C. No. 28.  
Denison, C.C.A.-6, February 16, 1950, affirming 11 T.C. 686.  
Mendelsohn, ¶50,057 P-H Memo T.C.  
Webster, ¶50,059 P-H Memo T.C.  
Buckley, C.C.A.-3, March 21, 1950, affirming ¶49,161 P-H Memo T.C.  
Carey, ¶50,065 P-H Memo T.C.  
Stanback, U.S.D. Ct., M.D. of N. Car., December 14, 1949.  
Batman, ¶50,070 P-H Memo T.C.

#### Appellate Courts' Reversals and Remands of Pre-Culbertson Decisions

Harris, CCA-9, July 13, 1949, reversing and remanding 10 T.C. 818.  
Treple, CCA-9, July 13, 1949, reversing and remanding Par. 48,093 P-H Memo T.C.  
Seabrook, CCA-5, August 2, 1949, reversing and remanding Par. 47,323 P-H Memo T.C.  
Ginsburg, CCA-5, September 13, 1949, vacating its own previous judgment, and reversing and remanding Fed. Supp.-Par. 72,501 P-H Fed. 1949.  
Nelsen, CCA-6, October 12, 1949, affirming Par. 48,039 P-H Memo T.C.  
Nelson, Par. 49,258 P-H Memo T.C.  
Funai, 13 T.C. No. 90.  
Johnston, C.C.A.-6, February 14, 1950, reversing and remanding ¶49,048 P-H Memo T.C.  
In Grayson v. Deal et al., U.S.D. Ct. Alabama, July 29, 1949, a District court set aside a jury verdict for a taxpayer and granted a new trial because the court doubted that a Culbertson family partnership existed primarily because of an incomplete gift of capital and of the absence of vital services.  
<sup>5</sup> Anderson, 6 T.C. 956 (A); Parker, 6 T.C. 974(A).

Wage and Hour authorities have treated it as such.<sup>6</sup>

Though it is true that family partnership problems are not confined to husbands and wives, partners consisting of inactive trusts for wives and minor children by and large remain tax vulnerable in the absence of other factors. Yet, wife and child trusts as partners have been countenanced where their creators do not misuse the intent by making them serve in fact their own selfish purposes.<sup>7</sup>

#### ORIGINAL CAPITAL

The origin of the invested capital is still a significant determining factor in family partnerships. The crux of the problem now is whether this capital was acquired by a subterfuge loan or gift in anticipation of being invited by the proprietor to join the latter in a partnership to effect nothing but tax saving for him. It is no longer a question as to whether the capital truly originated with the invited partner. A family partnership, transformed from a liquidated family corporation, was ruled to be tax-valid even though the invited partner's capital originated in a bona fide gift of corporate stock made to him three years previously but not in anticipation of the formation of the partnership. This decision was rendered before the advent of Culbertson. This principle is more true today.<sup>8</sup> On the other hand, attempts by a single proprietor to escape high tax brackets by organizing related businesses with partners who are so in name only are bound to be vulnerable because in reality the aggregate income is

earned by the original producers.<sup>9</sup> In accordance with the same principle, bona fide gifts of entire businesses to family members are tax valid.<sup>10</sup>

Where the contributed capital is disallowed as a governing factor because the previous gift is invalid on account of the absence of intent or of unrestricted control, gift taxes paid should be refundable. However, where the invited partner is expected to render vital services rather than make a capital contribution, no gift taxes are indicated. Peculiar as it may seem the theories of the income and gift tax laws are sufficiently inconsistent to make it possible for a donor to be liable for a non-refundable gift tax on a donation he made which he no longer owns or possesses, but is nevertheless liable for tax on its income because of the exercise of a degree of control over the latter.<sup>11</sup> Then again, if the family partnership is declared tax-invalid, its undoing might entail the payment of a new gift tax not to speak of such other potential problems as perhaps reconciling an estranged wife, obtaining releases from the trustee and beneficiaries of a tax-ineffective trust, and procuring a guardian for a minor child. In Michigan, a tax-invalid partnership was declared a nullity, strangely enough, on the theory that an erroneous knowledge of the Tower and Lusthaus doctrine was actually a mistake in fact though it appears to be one in law.<sup>12</sup>

An interesting pertinent question is, do gift taxes accrue on the subsequent annual payments of income to the invited partner, whether a gift tax had or had not been paid originally on an otherwise unqualified

<sup>6</sup> Hartz, Par. 47,121 P-H Memo T.C., 170 F(2d) 313.

<sup>7</sup> Mallory, Jr. v. Allen, D.C. Ga. 1947 P-H Fed. Tax Service Par. 72,615; Feldman, (CCA-5) 158F(2d) 488; Riggs, Sr., v. Thompson, D.C. Arkansas 1948, 1948 P-H Fed. Tax Service Par. 72,588; Armstrong, (CCA-10) 143F(2d)700, reversing T.C. 1008; Hager v. Kavanagh, D.C. Michigan 1948, 1948 P-H Fed. Tax Service Par. 72,462.

<sup>8</sup> See note 4 and Lawton, (CCA-6) 164F(2d)380, reversing 6 T.C. 138; Perlman, Par. 47,286 P-H Memo T.C.; Boozer, Par. 47,248 P-H Memo T.C.

<sup>9</sup> Werner, 7 T.C. 39; Greene, 7 T.C. 142(A); Berk, 7 T.C. 928.

<sup>10</sup> Semmler, Par. 48,031 P-H Memo T.C.; Henson, 10 T.C. 491.

<sup>11</sup> Fischer, 8 T.C. 732(A); Roeser, 2 T.C. 298(A); Friedman, 10 T.C. 1145; Strong, 7 T.C. 953, (CCA-10) 150F(2d)915; Bendet, Par. 46,098 P-H Memo T.C.

<sup>12</sup> Stone v. Stone, 319 Mich. 194. Compare Lowry v. Kavanagh, Par. 72,613 P-H Fed. 1948.

donation of capital to a family partnership? It would seem that the subsequent gift taxes would not be in order when it is established that the original gift was not intended as such or the donor retained administrative control over it. Incidentally in the famous Clifford case the taxpayer paid a tax on the original gift but the Treasury did not attempt to collect gift taxes from the donor-creator of the trust annually thereafter for the duration of its short-term, though it was disregarding the trust and taxing the donor-creator with the trust income, and the beneficiary was enjoying this income.<sup>13</sup> By the same token, for estate tax purposes, only the uncompleted gifts would be includible in the deceased donor's estate.<sup>14</sup>

#### VITAL SERVICES

While the nature of a partner's services may go toward establishing the tax validity of a venture, it does not escape the test of reasonableness of the dollar amount. Spare time assistance, occasional entertaining of customers, and vacation assistance alone may not establish the tax validity of a family partnership, but reasonable compensation therefor may be allowed the genuine proprietor as a deduction. When the regularity and necessity of the services of the alleged partner are denied, his salary may be non-deductible.<sup>15</sup> Accordingly, profits derived from personal services are taxable only to those who earn them. Therefore, for example, the splitting of income in accounting or brokerage proprietorships among family members cannot be effected tax-wise unless the invited partners perform such functions and are compensated commensurately.<sup>16</sup>

#### REALLOCATION OF INCOME

Irrespective of the nature of the operations of a family partnership, the Treasury puts a premium on the value of the services that the respective partners perform for the business venture. The Treasury strives first to allocate the profits among the partners according to their respective service values to the enterprise. The part of the earnings attributable to capital is divided among the partners based on their respective asset contributions. This doctrine stems primarily from the first Canfield cases.<sup>17</sup> In accordance therewith, the Treasury promulgated I.T.3845 which in practice recognizes (a) the tax-invalid, (b) the Tower and Lusthaus tax-invalid, and (c) the reallocated earnings partnerships. History played a prank on the Treasury. The entire rationale of the Treasury ruling has been declared in a sense fallacious. Culbertson has replaced Tower and Lusthaus; and the Canfield cases by their repeal have abandoned the principle of the possible reallocation of income of otherwise valid partnerships.<sup>18</sup> The Treasury in practice, however, still countenances the three categories of family partnerships, except that the reality test permeates them all.

#### CONCLUSION

The unequivocal Culbertson realism is a significant contribution to the solution of family partnership controversies. The earlier alternate arbitrary Tower and Lusthaus tests discriminated against a partnership interest, and favored real estate, stocks and bonds. They held that the donating of real estate to create a tenancy by the entirety or a joint tenancy, or of stocks and bonds to organize a family corporation or an unrestricted family

<sup>13</sup> Clifford, 309 U.S. 331.

<sup>14</sup> Bendet, Par. 46,098 P-H Memo T.C.

<sup>15</sup> Weinstein, Par. 47,078 P-H Memo T.C., affirmed CCA-6, 166F(2d)81, Cole, Par. 48,023 P-H Memo T.C.

<sup>16</sup> Humphreys, (CCA-2)88F(2d)430; Kent, Par. 47,110 P-H Memo T.C., reversed by 170F(2d)131.

<sup>17</sup> Canfield, 7 T.C. 135(A), superseded by 7 T.C. 1944, six judges dissenting.

<sup>18</sup> Canfield, 168F(2d)907.

trust yields taxable income for the donees and not for the donor. On the other hand, an equally genuine donation of a partnership interest is valid for all purposes but its income is attributable to the donor when the asset originated with him. It is already evident that Culbertson is recti-

fying this discrimination. It is now true that in the absence of vital services rendered by the invited partner and other realistic factors, the contribution of assets by the invited partner which stems from the proprietor by gift or loan does not condemn the partnership tax-wise.



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# THREE MAJOR CONCEPTS IN GOVERNMENTAL ACCOUNTING THEORY

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A STUDY of the development and progress of governmental accounting theory in this country indicates that there are three important concepts upon which it is based. These concepts are fund accounting, accrual accounting and budgetary accounting. Almost without exception, when individuals or organizations consider governmental accounting theory, their consideration centers around one or more of these concepts. Inasmuch as these three concepts have such an important position in governmental accounting, it would seem to be worth while to look at them more carefully.

## FUND ACCOUNTING

Some of the first uses of the fund concept in modern times around 1900 indicate that a fund was merely an account in which money was deposited to be spent for a definite purpose. As the money was spent for this purpose, the money was disbursed out of this fund. An illustration of this method of using funds is to be found in the annual report of St. Paul in 1893.<sup>1</sup> A perusal of almost any modern governmental report will indicate that a fund has now become a self-balancing group of accounts which are related. An example of this can be found in the annual report of the City of Rochester, New York, for the year 1947.<sup>2</sup> This change in usage is reflected in the change in definition as well.

When the term "fund" was used in municipal finance prior to about 1910, it

was used in its ordinary sense. That is, the term meant a segregation of cash for some specified purpose or purposes. Even today, fund means this same idea in its non-technical sense.<sup>3</sup> Let us contrast this meaning with the modern definition for governmental accounting. The National Committee on Municipal Accounting defines a fund as "a sum of money or other resources (gross or net) set aside for the purpose of carrying on specific activities or attaining certain objectives in accordance with special regulations, restrictions, or limitations, and constituting an independent fiscal and accounting entity."<sup>4</sup> Further insight into the modern technical concept of the fund can be gained from Morey and Hackett: "Each fund, as the definition indicates, is a distinct financial and accounting entity. In accounting for funds, the complete record of the assembly and application of resources from the time the fund is created must be shown separately. This means that a separate self-balancing group of accounts is required for each fund."<sup>5</sup>

The reader might well ask how and why the concept of the term fund changed so radically. The answer to these questions can never be categorically stated. However, carefully considered possibilities can be advanced. Before we consider these questions, though, let us ask ourselves

<sup>1</sup> Webster's New International Dictionary. Fund . . .

2. An accumulation or deposit of resources; a store; supply, 3. A sum of money, esp. one the principal or interest of which is appropriated or devoted to a specific object, as the carrying on of some commercial undertaking. . . .

<sup>4</sup> National Committee on Municipal Accounting: *Municipal Accounting Statements, 1941.*

<sup>5</sup> Lloyd Morey and Robert Hackett, *Fundamentals of Governmental Accounting, 1942*, p. 36.

<sup>1</sup> Report of the Comptroller of the City of St. Paul, 1893, p. 15.

<sup>2</sup> Annual Report of the Comptroller of the City of Rochester, New York, 1947, p. 12.



why any concept of funds ever was used. The answer to this question, although obvious, is very important in gaining an understanding of fund accounting. At an early date, man found that if he wished to stop the diversion of some of his resources from the purpose which he had selected to another purpose, the best way to do so was to set the resources aside in such a way that they could be used only for the desired purpose. The resources thus segregated constituted a fund. In governmental finance where a governmental unit may collect taxes for specific as well as general uses, where it may receive funds as an agent or trustee and where expenditures are controlled by legislative directives called appropriations, the chance that some resources may be expended for other than the desired purpose becomes great. In order to guard against diversion with its attendant perils, segregation of resources into separate funds was adopted.

This explanation seems to agree perfectly with the early use of funds in governmental accounting as shown earlier in this section. This segregation of resources was carried further in many cases, and cash was segregated not only into cash fund ledger accounts but also into separate bank accounts as well. It seems reasonable to state, then, that funds are the result of an attempt to direct and control the expenditure of resources.

Let us now consider the question, how the change came about. At the time that the old definition of fund was used, almost all municipal accounting consisted merely of single entry cash accounting, in other words a recording of cash receipts and disbursements. Fund accounting was adopted in many cases shortly after the adoption of double entry bookkeeping. This would seem to indicate that as long as municipalities were merely keeping a record of cash requiring no separate con-

sideration of equities, any cash segregation into a fund likewise would require no separate consideration of equities. Then, as double entry accounting came into the picture it became possible to account for other assets in addition to cash and other equities in addition to the proprietary municipal equity. This meant that the adoption of double entry accounting, providing for and requiring an accounting for equities as well as assets, made it necessary to consider the equities in the assets which were segregated into funds. This would seem to be a reasonable possibility for explaining how the concept of funds changed, since one of the primary differences between the old and new concepts of funds was the introduction of equity accounts.

We must still consider how some of the definitions of funds between the old and new can be reconciled with this hypothesis. In the *Handbook of Municipal Accounting*, a concept of funds is advanced which would seem to limit the fund accounts almost to budgetary accounts. Another set of accounts called proprietary accounts are used.<sup>6</sup> Perhaps this use of the term fund can be explained by pointing out that in essence the *Handbook* was presenting a means of accounting for anticipated assets following them through realization and application and considering these anticipated assets as segregated assets. Shortly thereafter, budgetary accounts and actual accounts began to be combined in the same account groupings and this with a few minor clarifications is the modern fund concept.<sup>7</sup> This discussion would seem to indicate that a probable answer to the question of how the concept of funds changed is based on the change from single entry to double entry book-

<sup>6</sup> New York Bureau of Municipal Research, *Handbook of Municipal Accounting*, 1913, pp. 14-20.

<sup>7</sup> Francis Oakey, *Principles of Governmental Accounting and Reporting*, p. 16.

keeping. This change made it necessary to consider in the accounts the equities in cash and other assets whereas prior to the change only cash was considered. The segregation of cash and other assets naturally forced a segregation of the equities in these segregated assets or funds also, bringing about a self-balancing concept of a fund.

Next, let us consider the question, why this change in the fund concept was adopted. With the development of double entry bookkeeping, accrual accounting was facilitated. The advent of accrual accounting meant that liabilities and resources other than cash could be reflected in the records. No longer did the amount of cash in the bank seem to express the amount of proprietary equity. It became necessary to consider other resources such as estimated revenue, taxes receivable, etc., and liabilities such as accrued interest and warrants payable. This meant that a segregation of cash could no longer be controlled merely by placing it in a separate cash account. When resources were designated for specific uses, it was necessary to consider all resources and all of the various equities in the resources if the control and direction of the expenditures of these resources as desired was to be accomplished. Once this need for continuous information about all segregated resources and the equities therein was recognized, a self-balancing double entry ledger was adopted since double entry bookkeeping provided for keeping records of assets and equities, and every dollar of assets had to have a dollar of equity claim. The modern fund concept, therefore, developed naturally out of the old fund concept because advances in accounting technique made it possible to exercise control more adequately by means of the modern fund concept.

There still remains a point to be considered. We have seen earlier in this sec-

tion that double entry bookkeeping with its technique of accounting for equity was adopted before the modern concept of fund accounting was adopted. Those who introduced double entry bookkeeping were doing so mainly for the purpose of bringing additional assets and liabilities besides cash into the general accounts. The modification of proprietary equity by the introduction of these items was more an unanticipated result rather than a reason for the adoption of double entry bookkeeping. Inasmuch as the proprietary equity, in the case of all assets, belonged to the same proprietor, the city, little need was felt for determining the breakdown of this equity. It was only after the full impact of double entry bookkeeping had demonstrated that a segregation of one asset also required a segregation of all other related assets and liabilities if the direction and control of the segregated asset was to be effective that the proprietary equity was split up into segregated portions as well. In other words, double entry bookkeeping brought with it the recording of equities as well as assets. After the introduction of double entry bookkeeping, the old fund concept began to lose favor because of its inability to direct and limit expenditure effectively. This inability resulted from the presence of liabilities and other assets besides cash which the old fund concept did not embrace and, therefore, could not direct and limit. In its place a new fund concept that was able to exercise effective control gained favor. This new concept did embrace, and thereby gained control over, non-cash assets and liabilities in a group of segregated balancing accounts.

#### ACCRUAL ACCOUNTING

Whenever we speak of accrual accounting or accounting on an accrual basis, we must be sure to consider what our definition of the accrual basis might be. This is

necessary because the accrual basis has been used to describe all accounting procedures that differed in any way from the cash basis. Procedure on the cash basis is merely to account for receipts and disbursements of cash (perhaps with some debtor and creditor records). If an accounting record is kept of anything else in addition to cash, the records are said to be on the accrual basis.<sup>8</sup> Therefore, in this section it will be necessary in considering the development of accrual accounting to remember constantly the various forms which accrual accounting may assume.

Just as in commercial accounting the trend in governmental accounting since 1900 generally has been toward a wider adoption of accrual accounting accompanied by attempts to extend the accrual systems adopted to cover more and more items. However, governmental accounting has not adopted the accrual concept as broadly as has commercial accounting.

In 1913 the *Handbook of Municipal Accounting* stated, "We are forced to conclude that revenue accrued is something entirely different than cash received, and that if we are going to record the facts which will tell us how our financial program has worked, we must enter under the head of revenue the full amount due the

city regardless of whether it has been received in cash or not, proper allowance being made for the amount which from experience might be regarded as uncollectible."<sup>9</sup> A similar statement is made about expenditures. Since this is recognized to be one of the first authoritative statements of governmental accounting theory, we can assume that this concept of accrual accounting was relatively new in 1913.

The modern view of the accrual concept can be gained from a consideration of the position of the National Committee on Municipal Accounting.<sup>10</sup> This position in effect recommends the use of the accrual basis in accounting for both revenue and expenditure insofar as it is practical. Revenue should be taken into the accounts when it is earned and expenditure should be taken into the accounts as the liability is incurred. In neither case should the transfer of cash be the only justification for making the entry. Also, suitable provision should be made for estimated losses in the accounting for revenue. This opinion is very similar to the one advanced in 1913 and is also similar to the opinion expressed by Morey and Hackett.<sup>11</sup>

Perhaps the forces leading to the adoption of the accrual basis can be most easily understood by considering an analogy. Let us set up a hypothetical situation in which an individual has received fifty dollars in cash during a period in which he spent forty dollars of it, leaving him a balance of ten dollars at the end of the period. In this case, the cash basis would lead us to the conclusion that his expenditures had been less than his revenue by the amount of ten dollars. Now let us consider some additional facts in this situation. Let us assume that our

<sup>8</sup> W. A. Paton, *Accountants' Handbook*, Third Edition, 1943, p. 1300.

Here three bases are pointed out, the cash basis, the modified cash basis and the accrual basis. An illustration of the levying and collecting of taxes will make each of them clear.

Cash Basis	Modified Cash Basis	Accrual Basis
A. When taxes are levied		
No entry	Taxes Receivable	Taxes Receivable
	Provision for taxes	Unappropriated Surplus or Revenue
B. When taxes are collected		
Cash	Cash	Cash
(Single entry)	Unappropriated Surplus or Revenue	Taxes Receivable
	Provision for Taxes Receivable	

For the purpose of the above discussion, the modified cash basis is considered to be one of the many accounting procedures on the accrual basis.

<sup>9</sup> Bureau of Municipal Research, *Handbook of Municipal Accounting*. New York: 1913, pp. 3, 4.

<sup>10</sup> National Committee on Municipal Accounting, *Municipal Accounting Statements*, Bulletin No. 12, June 1941, pp. 8-10.

<sup>11</sup> Lloyd Morey and Robert Hackett, *Fundamentals of Governmental Accounting*, 1942, pp. 28-29.

individual owes thirty dollars on items and services purchased during this period, and that ten dollars is owed to him by his employer. On the cash basis his revenue has still exceeded expenditure by ten dollars. However, if the cash basis is replaced by the accrual basis, it becomes possible to recognize ten dollars more as revenue, and thirty dollars more as expenditure. Now, expenditures exceed revenues by ten dollars even though cash receipts are still in excess of cash disbursements by ten dollars. If our individual is content to use the cash basis instead of the accrual basis, he is quite likely to mislead himself into feeling that his financial affairs are fine when actually he is not as well off as he thinks.

After governmental units had reached erroneous conclusions regarding their financial affairs in the same manner described above, they began to adopt the accrual basis. Of course, this consideration was by no means the only force favoring the accrual basis, but it was by far the most potent. Another force tending to the adoption of the accrual basis was the desire for records concerning other assets besides cash in order to facilitate the administration and control of and the reporting on the administration of these other assets. Some of these assets were taxes receivable, assessments receivable, investments and fixed properties. This same problem of administration also arose in connection with liabilities particularly funded debt.

As the services demanded of governmental bodies became more diversified and of greater magnitude, and as the governmental bodies grew in size, the complexity of their operations increased. This made the problems incident to controlling operations more complex and difficult to meet. In order to meet these problems more satisfactorily, budgetary procedure was developed, but this in turn

depended upon knowing how much was available for appropriation. Also it was necessary to know how much of an appropriation was still available for expenditure. These questions could be answered much more dependably from a consideration of revenue and expenditure, both actual and anticipated, determined on an accrual basis rather than on the cash basis. Control over operations as well as control of assets and liabilities is more effective when financial records are on an accrual basis.

It is not difficult to see why governmental accounting theory supported the accrual basis when we contemplate the demands of administrators, legislators and others who rely upon financial reports for information about other items besides cash. Once the demand for this information was sufficiently strong, accounting theory was bound to develop techniques which would supply it. In this case, the technique was accrual accounting made possible by double entry bookkeeping.

#### BUDGETARY ACCOUNTING

Although simple budgets existed long before 1900, it was not until sometime later that budgetary accounts were incorporated into the ledger of governmental units. Also, the passage of time has seen the development of more formal and complex budget reports and procedures.

A budget is a financial plan for the future. It may be only a partial plan covering only a part of the possible future transactions. One example of a partial budget might be one in which only expenditures were considered. A budget may also be a complete plan covering all of the possible future transactions which can be foreseen. A complete budget would include a consideration of revenue as well as expenditures. This is the only plan which meets the currently prevailing definition of a



budget: "An estimate of proposed expenditures and the proposed means of financing them."<sup>12</sup> The value of budgetary planning was recognized in governmental administration at an early date. In 1913, *The Handbook of Municipal Accounting* stated, "To enable the taxpayer as well as the legislative officer to know what the executive proposes to do with the funds asked for, to locate responsibility for proposals made as well as for policies adopted and amounts authorized to be spent, laws have been passed which require that budgets be submitted."<sup>13</sup> Eight years later, Francis Oakey made this statement regarding the purpose of budgets. "A budget is therefore a means by which the executive branch sets forth in detail a financial program for the consideration and approval of the legislative branch and the public. It is also a means of making clear the operations of the next preceding fiscal period and the results of those operations, with the special view of casting light upon the wisdom of approving the proposals for future expenditure. A budget is thus one of the most important of all financial reports."<sup>14</sup>

The chief difference between the theory expressed in these statements and modern budget theory is the extent to which the budget has been incorporated into the ledger. Morey and Hackett express the modern budget theory in Chapter V of their text on governmental accounting.<sup>15</sup> This Chapter explains the use of budgetary accounts such as estimated revenues, appropriations, encumbrances, etc. A similar discussion of the incorporation of the budget into the ledger is to be found in

the *Accountants' Handbook*.<sup>16</sup>

Now, let us consider why budgets were considered to be desirable. Turning to the definition of a budget as a financial plan, we can realize that in advocating budgets accountants were in effect advocating financial plans for the future. Whenever one mentions a financial plan the advantages of pre-consideration, coordination, perspective and so forth come to mind. As governmental units became large and more complex these advantages of financial planning became greater and more necessary. The use of a budget really substituted direction and to some extent control where previously financial transactions had followed a haphazard pattern. The chances for financial stability were bound to be greater in the case of a city whose expenditures had been carefully coordinated to anticipated revenue than in one where no such coordination existed. A careful consideration of all of the possible means of spending the taxpayer's dollar could not help but produce better balance in expenditures of that dollar and, therefore, derive greater benefit from the expenditure than a policy of spending on any request which came along until nothing was left. There can be little doubt as to why budgets in themselves were felt to be so desirable and necessary.

Now, let us turn our attention to budgetary accounts. For many years governmental accounting followed the same policy which commercial accounting continues to follow, that of recording only transactions that have actually happened. The introduction of budgetary accounts into governmental ledgers projected these ledgers into the future. No longer did they record only what had taken place, they now recorded what was felt to be reasonable estimates of what will take place in the near future. What we must try to

<sup>12</sup> National Committee on Municipal Accounting, *Municipal Accounting Statements*, Bulletin No. 12. June 1941, p. 158.

<sup>13</sup> New York Municipal Bureau of Research, *Handbook of Municipal Accounting*, 1913, p. 26.

<sup>14</sup> Francis Oakey, *Principles of Governmental Accounting and Reporting*, 1921, pp. 521-522.

<sup>15</sup> Lloyd Morey and Robert Hackett, *Fundamentals of Governmental Accounting*, 1942, Chapter V.

<sup>16</sup> W. A. Paton, *Accountants' Handbook*, Third Edition, 1943, pp. 1303-1309.



discover now is why budgetary accounts were accepted.

Perhaps a clue can be gained by asking ourselves why it was felt to be desirable to project the ledger into the future; what use was to be made of this projection into the future. Probably the answer to these questions is found in two words: comparison and control. By projecting the future into the accounts it became practical to compare in the accounts the past with the future as a continuous process. In other words, as entries were made which converted estimates previously made into actuality, a comparison of the estimate and the actual result was made almost unavoidable. This comparison was absolutely essential to the proper functioning of a budget. A budget is of little use if the actual financial transactions are not directed and controlled by it. If a person carefully picks out a route of travel on a road map and then throws it away and proceeds from one junction to the next as best he can, the initial planning was of little use. In like manner, if a governmental body constructs a financial plan and then allows transactions to take place with no regard for the plan, it is of little use. The effectiveness of a budget depends upon its ability to control the actual financial transactions as they take place.

The ability of budgets to exercise effective control is necessary to a greater degree in governmental or non-profit accounting than it is in commercial accounting because of the legal significance of the budget. The appropriations which the budget makes are legal authorizations to expend resources. They not only authorize expenditures, they also direct how the resources are to be expended and place limitations on the amount and manner of expenditure. This means that the approval of the budget by the legislative body sets up definite legal authorizations and re-

strictions which must be conformed to. Therefore, if the budget is ineffective in its efforts to control actual transactions, it is highly probable that the law has not been complied with. Over and above the desirability of budgetary control in regard to efficiency of governmental operation etc., the legal character of budgetary appropriations makes it mandatory that budgetary control be effective.

Budgets go through two phases: formulation and execution. The executional phase of the budget is the use of the budget to control actual transactions. This control depends upon the comparison of the actual transactions with the budgeted transaction and the determination of policy and the direction of action according to the results of the comparison.

It would seem that the comparison of actual and budgetary transactions could be made without introducing budgetary accounts. This undoubtedly was done in many cases as indicated by examining financial reports and comments before the introduction of budgetary accounts. However, it was discovered that the use of budgetary accounts made this comparison not only possible but also continuous and almost impossible to escape.

The rise of budgetary procedures cannot be denied. It can probably be attributed to the increasing desire to exercise control over the finances of governmental bodies. It was realized that this control—getting the results desired from financial transactions—was comprised of two distinct operations. First, the desired results and the transactions which would produce them had to be determined. This was done in preparing the budget. Secondly, actual transactions had to be made to conform as closely as possible to those set up in the budget. This was accomplished by policies and actions based on comparison. The development of budgetary procedures accomplished the first of these operations

and the introduction of budgetary accounts was of great assistance in making the second operation successful and effective.

#### CONCLUSION

As additional control becomes desirable, accounting theory must be considering constantly the ways and means by which accounting practice can be changed in order to provide better control. Before intelligent changes can be proposed, the present technique used in governmental accounting must be thoroughly understood. The purposes of this study are to

present some ideas about the theory of governmental accounting and to provoke additional discussion out of which understanding may be advanced. Although only three concepts were given consideration here, it must not be assumed that others may not also be present. However, the future of governmental accounting theory seems strongly dependent on these three concepts as aids in controlling governmental operations, and their position as major concepts in governmental accounting theory make their mastery a necessity for anyone concerned with governmental accounting.

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# PRICE AND MORTALITY EXPECTATIONS AND VALUATION OF INVENTORIES

JOHN PAGANI AND WILLIAM O. JONES

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IN THE current controversy over the use of the LIFO and the FIFO plans in inventory valuation, it has apparently not been generally recognized that each of these plans, as well as the "base-stock" plan, is based on a different set of expectations as to the life of the inventory and as to the future course of prices. Examination of the set of expectations implicit in each plan may help to determine which method should be used in a given situation. At least such an examination will help to clarify the economic issues involved in the debate.

It will be helpful to consider first a method of inventory accounting not now much involved in the income controversy, although closely related to one of the disputed methods. This is the "base-stock" plan. Under this scheme there is assumed to be a minimum working stock which the firm must maintain at all times in order to continue doing business. Since this base-stock cannot be sold without immediate replacement, the firm cannot convert the inventory into more liquid form by selling any or all of it when the market price rises, nor need it acquire more liquid resources to cover a loss when market price declines.<sup>1</sup> This inventory represents a *sunk* cost; once acquired, its value to a continuing concern is divorced from the market. Usual practice under the base-stock plan is to carry inventories at a cost that is as low or lower than any cost (arbitrarily chosen) experienced by the firm to date.<sup>2</sup>

When the LIFO plan is followed inventories are valued as if the last increments of an item put into stock were the first sold in the antecedent period. If the firm has no goods on hand at the end of the accounting period other than the base stock, LIFO and base-stock yield similar results. Under LIFO, and under the base-stock plan, the cost of goods sold is computed at very nearly current market cost; goods kept in stock are priced the same as the first goods put into the inventory. In time of rising prices, LIFO results in an inventory value and income from sales that are lower than they would be if inventory were carried at current market prices. In time of declining prices, the reverse is the case.<sup>3</sup>

When inventories are valued in accordance with the FIFO plan, the oldest goods in stock are assumed to be sold first, and the inventory is thought of as always being made up of new individuals, although the number of these individuals may be fairly constant. Cost of goods sold is computed as the actual cost of the oldest goods available for sale during the accounting period. Similarly, inventory is valued on the basis of the price of the most recent additions to inventory.

The following example demonstrates the

<sup>3</sup> Under a progressive income tax, this lower statement of income in prosperous times and higher statement in depressed times makes the firm's average tax burden lower than it would be otherwise. It is argued, however, that use of LIFO in a growing concern with expanding inventories may result in a tax disadvantage as compared with FIFO. See G. H. Blackett and D. Ladin, "Disadvantages of Lifo for a Growing Retail Establishment," *Journal of Accountancy*, July 1949, pp. 58-62. The base-stock plan has not been approved by the Commissioner of Internal Revenue for income tax reporting, but LIFO is now acceptable. *Federal Regulations on the Income Tax*, 111, section 29.22 (d)-1, as amended.

<sup>1</sup> Compare the reasons given for the adoption of the "base-stock plan" by the National Lead Company in 1920 as reported by J. Keith Butters, "Management Considerations on LIFO," *Harvard Business Review*, May 1949, p. 311.

<sup>2</sup> W. A. Paton (Ed.), *Accountants Handbook*, 3rd edition, New York, 1943, pp. 571-72.

basic differences and similarities among the three plans.<sup>4</sup>

tory is a finite number of accounting periods—let us say one.<sup>5</sup>

	Base Stock		LIFO		FIFO	
	Units	Amount	Units	Amount	Units	Amount
Inventory, January 1	100	\$ 500	100	\$ 500	100	\$ 500
Purchases:						
(in time sequence)						
1st purchase at \$6	40	240	40	240	40	240
2nd purchase at \$8	50	400	50	400	50	400
3rd purchase at \$9	40	450	40	450	40	450
4th purchase at \$9	40	450	40	450	40	450
5th purchase at \$10	60	600	60	600	60	600
Total Available for sale	330	\$2,640	330	\$2,640	330	\$2,640
Inventory, December 31	100	500	100	500	100	1,050
Cost of Goods Sold	230	\$2,140	230	\$2,140	230	\$1,590
Total Sales		\$4,000		\$4,000		\$4,000
Cost of Sales (as above)		2,140		2,140		1,590
Gross on Sales		\$1,860		\$1,860		\$2,410
Carry Value of Inventory, December 31 (as above)		\$ 500		\$ 500		\$1,050

The difference in the face of rising prices is reflected in the gross profit which is \$550 greater under FIFO than in either of the other two methods. This in turn is a reflection of the understatement of inventory at *current prices* under either base-stock or LIFO by an equal amount.

Depending on the assumed life span of the inventory and on the assumed course of prices, any one of the three methods of valuation may be appropriate. The method used, then, implies certain "mortality expectations" and "price expectations."

Mortality expectations may take three forms:

1. The expected future life of the inventory is zero.
2. The expected future life of the inven-

3. The expected future life of the inventory is infinite.

Once a mortality expectation is adopted it is possible to know for what period price expectations must be held, and it is also possible to equate the value of inventory to dated market prices. It is not to be inferred that this equating of inventory value to market value is a simple identity. In this regard, the inventory problem is only a part of a much larger one, the whole problem of the determination of income. Given the going-concern, the main feature of the operation revolves about the ability of the firm to generate disposable income, and therefore the question of valuation of assets is not one of liquidation by sale today, or tomorrow, but of their routing *via* income. It is the income stream that is in focus, not sunk costs as represented in assets on hand which, by the definition of the going-concern, will not be liquidated, except as a result of the normal operations of the firm. This postulate, that assets will never be liquidated except by transformation

<sup>4</sup> Certain facilitating conditions have been introduced in the illustration. Base-stock and LIFO have been made to yield the same results. This is not necessarily true. There may be either an increase or decrease of inventory. However, in such instances base-stock would use a reserve technique to eliminate the variation. LIFO, presently, permits no such device, although during the war years and immediately subsequent thereto, the Federal Tax statutes took cognizance of "involuntary liquidation" of LIFO inventories by permitting amendment of tax returns if the "involuntarily liquidated" portion were replaced within a specified number of years.

<sup>5</sup> For the sake of simplicity, we equate the accounting period to the transactions interval, the period an item remains in stock.

into the form in which they are usually sold by the firm, is the true meaning of selling in the market; assets are not simply to be put on the market as they are.

Now the three types of plans for valuing inventory can be paired with the three mortality expectations. Let us first consider the base-stock plan, which assumes that inventory will be maintained in perpetuity.

In many types of business, inclusion of a minimum stock as an integral part of the firm's fixed assets is probably an appropriate recognition of its contribution to the going-concern. Such a minimum stock is frequently determined by the technological coefficients. If a continuous-process industry, for example, is to operate at all, there is a certain minimum below which the amount in process cannot fall. On the other hand it may be that technological considerations will dictate a somewhat larger amount in process for most efficient operations.

The desirability of holding minimum stocks may also arise as a result of institutional determinants. A retail store, for example, may attempt to maintain stocks at a level high enough to make the cost of carrying an additional unit just equal to the probable value of the sales lost by not having it.

Both technological and institutional factors will lead to a demand for stocks relating each level of stocks with its value to the firm. It is probably unrealistic, in most instances, to picture the base-stock as absolute in amount. It would be better to think of a demand schedule for stocks.<sup>6</sup>

When it is attempted to extend the base-stock plan to firms having no such immortal inventory the practice becomes a bit far-fetched. When obsolescence, changes of style, and innovations result in a frequent

change in the character of goods sold, there is no base-stock in any sense.

But if inventory is somehow immortal then the value to be assigned to the base-stock properly arises, not from the original sunk costs but from the income-generating power of the total economic entity in which the inventory is only one part. It thus becomes extremely difficult (if the base-stock is actually an irreducible minimum) to assign any specific value whatever to it. In practice it is undoubtedly proper, if the assumption of perpetuity of inventory is accepted, to compute the value of the base-stock inventory in exactly the same way as the value of all capital assets is figured. The value of the base-stock might be put at zero and the total value of all capital assets of the firm combined in one figure which is the capitalization of the anticipated income stream over time. Strict logic demands that the base-stock should be entirely removed from the inventory category and simply accepted as a part of fixed assets.

Valuation of inventory under the base-stock plan is made difficult, primarily because of the impossibility of holding any sort of definite price expectations for the indefinite future. This difficulty is not peculiar to base-stock inventories; it is shared by all fixed assets. LIFO, despite its close kinship to the base-stock plan, solves this problem by assuming a life span of zero with the corollary expectation that prices at the time of liquidation of the inventory will be what they were on the day the initial stock was acquired. This is tidy, but is perhaps an oversimplification.

It is probably not often recognized that the inventory life implied by LIFO is zero, but it is a reasonable inference from the LIFO system of valuation. LIFO values inventory on hand when the accounting period ends at the prices paid for the first items put in stock. This is the same as saying that when this inventory is liquidated

<sup>6</sup> For a discussion of the demand for stocks in the distribution of wheat, see Holbrook Working, "Theory of the Inverse Carrying Charge in Future Markets," *Journal of Farm Economics*, February 1948, pp. 1-28.



it will bring the same price as was paid at the time the inventory was first set up. Prices prevailing at the birth of the inventory, then, are taken as the best estimate of the prices that will prevail at its death. This price expectation is justified if the expected life of the inventory when it is purchased is zero.

Expectation of zero life for an inventory sounds like nonsense, but it does give some meaning to the price expectations implied by LIFO. If we attempt to find a more reasonable life expectation consistent with LIFO, the price expectation becomes nonsensical. If an expected life span of infinity is substituted for one of zero, then the companion assumption is that the historical cost of the oldest unit in the inventory is the best possible estimate of the capitalized value of the income stream arising from holding such an asset in perpetuity. This is equivalent to equating expected prices for the indefinite future to market prices when the inventory was acquired.

In fact no set of expectations can make valuation of inventory under LIFO at all realistic. What LIFO tends to do is to eliminate from the income statement in a rather haphazard manner profits and losses which arise from appreciation or depreciation of the value of inventory—losses which may be quite real and which may even be so real as to bankrupt the firm. Under LIFO it is impossible to isolate in the financial accounts the effect of price changes on the inventories of the firm. This is a serious disadvantage. When it is coupled with the unrealistic expectations assumed, it robs the scheme of both managerial and economic validity. Historically, in the decade since 1939, a period of generally increasing prices and increasing tax rates, the value of LIFO has been restricted to its effect in reducing income taxes.

Under FIFO, the inventory may be thought of as having a life span of one ac-

counting period.<sup>7</sup> Since inventory is valued at the price of the last units acquired, the implicit price expectation is of no change from the date of the last actual purchase until the end of the accounting period, or more generally, for no change in prices over one accounting period. If it is necessary to use an automatic price-expectation formula, this is probably about the best that can be evolved. Furthermore, under this scheme, expectations are confined entirely to the inventory account and to other asset accounts.<sup>8</sup> The income statement under this plan of accounting includes income realized as a result of appreciation in the value of goods or losses resulting from a decline in the value of goods. The income statement, then, is actually an *ex post* record of realized income or historical income rather than an *ex ante* statement of what income will be in the next period if sales are the same as they were in the previous period, and if cost of goods sold is the same as it was at the end of the previous period.

LIFO may be regarded as nothing more than a device to bury immediate expectations. But under orderly operation of the enterprise decisions are visualized in sequence followed by the sale of goods in the same sequence. The income statement should measure the realization from these decisions whether due to price-level movements, productive operations, or changes of demand. The income is there—realized.

<sup>7</sup> The assumption that the transaction interval is identical with the accounting period is made for convenience in analysis. It would be more accurate to say that under FIFO the life of the inventory is assumed to be a finite (small) number of accounting periods during which the price of the inventory will not change. When the assumption is relaxed, modifications of FIFO are used which attempt to preserve a close relationship between expectations and inventory valuation.

<sup>8</sup> Expectations are not actually embodied in the physical assets but more properly are expressed through them in terms of a going-concern. It is quite proper for income in the statement of the firm to be an *ex post* quantity since it is purely a report of the results of decisions.

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The outcome of another set of decisions is yet to come.

FIFO is a measure of a historical quantity; LIFO is a measure of a hypothetical quantity. Certainly from the standpoint of management it is best to use a plan which reports historical magnitudes and then make corrections on the basis of anticipated changes in the price level, thus making the assumption with regard to expectations explicit, rather than to have the expectations assumption submerged in the income statement.<sup>9</sup>

The price and mortality expectations implicit in each of these methods of inventory valuation are represented schematically below:

Method	Expected Life	Expected Price
Base-stock	$\infty$	?
LIFO	0 or $\infty$	Price at time of purchase of initial inventory
FIFO	1	Price at time of purchase of most recent inventory

For many firms, the mortality expectation of the base-stock plan seems most appropriate, but the problems involved in formulating price expectations under this plan make its uniform administration extremely difficult. On the other hand, mortality expectations used in FIFO are close to practice in firms handling a variety of products, and price expectations are based on about as good an automatic formula as can be devised. If LIFO is interpreted as implying a life expectancy of zero, little can be said in its defense; if the implied life

expectancy is infinite, then the price expectation is meaningless.

Expectation of infinite life for the firm reflects the necessary position of management in its disposition to acquire assets, and in this sense inventory is immortal too. All real assets of the firm actually become a part of the operating substance of the entity. Inherent in operation of the enterprise is a drive to maintain integrity of the assets. Valuation based on liquidation is not consistent with this position. If, however, inventory is to be treated as perpetual, there probably is no formula capable of yielding a suitable price expectation from firm to firm. It is certainly improper to equate anticipated prices to a remote purchase price.

But the individual bundles of goods making up inventory do not partake of the immortality of inventory in general. When management commits a part of its current revenue stream to the purchase of inventory (or any other asset) either for replenishment or increase, it assumes there is a future market for the goods acquired which will be profitable on the basis of costs when the goods were purchased. Price expectations are thus reflected in management's decision to acquire goods; FIFO attempts to tie each specific bundle of goods to the expectations which brought these goods into the firm. Once any particular bundle of goods has disappeared from the firm it is appropriate to let the expectations associated with them, as expressed in their valuation, disappear too.

What the firm has in the way of assets is a mirror of expectations on the day of acquisition. Sometime later the firm will be better or worse off because of this. It seems appropriate therefore to use as the basis for inventory valuation those prices which are closest in time to the management's decision to acquire assets.

<sup>9</sup> "... LIFO can never refute the charge that it has re-introduced secret reserves into American financial practice under the sanction of a generally accepted accounting principle." M. Moonitz, "Adaptations to Price-Level Changes," *ACCOUNTING REVIEW*, April 1948, p. 142; c.f., W. J. Graham, "The Effect of Changing Price Levels Upon the Determination, Reporting, and Interpretation of Income," *ACCOUNTING REVIEW*, January 1949, pp. 15-26.

# THE TEACHERS' CLINIC

S. PAUL GARNER

EDITOR'S NOTE: Many of the experienced teachers, as well as some of the new ones, have developed devices and techniques for the presentation of certain of the knotty aspects of accounting, and it is felt that such suggestions might well be made available to the other members of the teaching profession through *The Teachers' Clinic*. Accordingly, contributions are hereby invited. Please address all correspondence to S. Paul Garner, School of Commerce and Business Administration, University, Alabama.

## THE SOCIAL SERVICE OF ACCOUNTING

A. C. LITTLETON

*University of Illinois*

Accounting teachers can easily be so concerned to help their students grasp technicalities that they may miss the opportunity to drop suggestions now and then regarding the social service rendered by modern accounting.

Business activities are such a prominent part of modern life that an elementary understanding of business, such as can be obtained through even a little study of accounting, can prepare the individual to be a more comprehending citizen. For example, business enterprises generate a very large amount of government revenue. Some understanding of enterprise accounting therefore provides some understanding of one of the bases on which modern government stands—government services paid for by revenue derived from business profits.

Accounting not only gives us a glimpse of business as a generator of tax revenue but it helps us to realize that business, in one way or another, "is the paymaster of us all." Out of business activities comes wages of workers, wages of capital, wages of management. Business—by division of labor, by use of machine power, by developing mass distribution of products—has created vast areas of employment for men and capital. By interweaving human employment under constantly improving conditions and the investment employment of the savings of a great many people,

modern society has used business to build up a tremendous and effective system of cooperative endeavor among the workers, the savers and the planners who serve as business managers. The same people appear again in the picture of social cooperation at the point where goods and services from enterprise activities flow out to the ultimate consumers.

It is evident from the existence of these interrelations that the activities in business enterprises will be complex and technical in many respects. And this fact indicates another area of accounting's service to society—the service of making this technical complex more understandable to persons charged with administering the complex, that is, the managers.

Accounting can render these services, not because it uses records or double entry bookkeeping, but because its data throw light upon the critical area of enterprise activities—the area of service-generating, profit-making activities. This is the area reflected by the income statement. The reasons this statement's data are illuminating are because (1) they show (via enterprise income) the degree of enterprise accomplishment in furnishing wanted goods and services and (2) they show (via enterprise expense) the success of enterprise efforts to produce its supply of goods or services at a cost below the sum the user can and will pay.

Accounting thus makes possible informative comparisons between the details of the efforts made (expense) and the details of the results achieved (income). In this way accounting makes an important contribution to the preservation and advancement of productive enterprise. This periodic matching of expense and income is particularly useful because it keeps management constantly informed of the way the enterprise is, or is not, living within its income. And this in turn directs the attention of management to the study of external conditions affecting income and to the study of internal conditions affecting expense.

Living within one's income is no easier in a business enterprise than in a family. It is important to society that the service rendered by enterprise management in this respect be well understood. For all parties touched by business activities draw benefit from the results of manage-

ment working at keeping its own enterprise living within its income. To do this management exercises many skills—skill in judging soundly among alternatives; skill in resourcefully devising ways and means; skill in the use of experience in appraising men and plans and conditions. Yet, some publicists seem to strive to convey the impression that management acts mainly to foster monopolistic controls over prices and to pass a low ceiling upon the wages of labor.

It is noteworthy that the clue that calls up a manifestation of managerial skill often comes from the study of prior expense and income data produced by enterprise accounts; and it is significant that expense and income data, viewed later after the exercise of managerial judgment, act as a meter registering the results of the previous managerial decisions. Clearly accounting makes a social contribution here.

### A PLEA TO AUTHORS

PAUL J. GRABER

*University of Tulsa*

Recent publications of texts in accounting show some evidence that their authors have not always taken the same objective for their manuscripts as they would allege for the subject matter of their material—utility.

Reference notes are the case in point.

It is true that the reader may proof the quotation, verify the expressed opinion, or find the more extended discussion when he is referred to:

A. Hereford, *Watered Stock in Ranching Enterprises*, 4 Grassland's Accountant 65-97.

or,

Q. Roustabout, *Accounting for Dry Hole Money*, Gas and Oil Fortnightly, Vol. XIII, pp. 27-31.

And his research may be particularly simplified when his library materials are sturdily bound in quiet green buckram and precisely arrayed with their gilt volume markings standing out like sore thumbs.

But in many areas of accounting, expressed notions, explained practices, and described procedures are especially perishable. Even a passing acquaintance with the more recent accounting literature should bring the realization that writings on accounting subjects must be evaluated or interpreted in relation to their place and time. For the latter, the rankest novice soon learns to recognize certain landmarks: 1913 and the Federal Income Tax; the 20's and "Prosperity"; 1929 and after and prosperity "around the corner";

1933-34 and the Securities Acts; etc.

Thus, in many situations the important significance of the footnote lies not in its answer to the query—"Did Professor Soandso say that?", but to—"When did Professor Soandso say that?". The answer to the second question isn't most plainly given by volume citations.

The writer's plea may be simply stated: Use the same standards of disclosure and reader convenience in referencing manuscript materials as would be used in reporting financial data in statement form. In spite of style books, customs in legal literature, etc., to the contrary, if the

citation refers to Vol. 13 of *The Auditor and Bookkeeper*, put the reader on notice immediately that the material was published in 1916.

As accounting references,

C. Henepin, 4,007 *Proper Charges to Capital Surplus*, 12 *Manager's Monthly* 11-77 (1926)

or,

C. Henepin, 4,007 *Proper Charges to Capital Surplus*, *Manager's Monthly*, July, 1926, Vol. 12, pp. 11-77,

are more useful than similar citations without dates.

## A RECONSIDERATION OF THE COURSE OBJECTIVES OF ELEMENTARY ACCOUNTING

DAVID GREEN, JR.

*University of Chicago*

Of the problems of making education meaningful one of the most important is the careful construction of specific course objectives. This is not a "one time" task, but rather is something which must necessarily confront the educator continuously. Meaningful objectives do not just grow nor, because of the changing social environment, can they be handed down from generation to generation. To be most meaningful, they must be adapted to the needs of students and the needs of society; and they must be in harmony with the philosophy of the institution in which the courses are taught.

The purpose of this paper is to reconsider what might be the most meaningful objectives for elementary courses in accounting with consideration given to the needs of students and to the needs of society. Further objectives are considered in both contextual as well as behavioral terms.

The fact that most schools or colleges of business require all students to take

some work (varying from one to four courses) in accounting gives rise to the first and perhaps the most difficult problem—a group of students with different needs. This is a difficult problem because the elementary course usually plays a dual role. It is expected to provide accounting students with a methodological framework necessary for their specialization, as well as provide the non-accounting students with an understanding of basic subject matter in preparation for the advanced study of methods and problems of management.

If a dichotomy is made and one thinks of one group as being the future accountants and the other group as being the general managers or specialists in other business fields, it is clear that the needs of one group are at least partially different from the needs of the second group. For example, one of the major aims of the beginning course is taken to be the learning of such manipulative skills and techniques as journalizing, posting, preparing



trial balances, worksheets and the like. These are, in a sense, ends for the accounting students who will as accountants be called upon to perform or supervise these activities. It is not likely that the other group will have much need to engage in these activities in connection with their major work. For this group, these skills and techniques are but means to an end—the end of understanding and interpreting accounting reports which they as general managers or other specialists will receive and be required to act upon intelligently.

Consider another major aim of the beginning courses—that the students learn how to prepare financial statements. Again it can be shown that this objective is an end for one group and but a means for the other group as above. A further extension of this point is in order. One may safely assume that the preparation of statements requires a knowledge and understanding of certain accounting principles or conventions, especially those associated with the timing and measurement of income. However the results obtained from the application of these notions can not be universally accepted, especially during times of violent price changes. This has implications for both accountants and general managers. In the advanced accounting courses it is hoped that the students are confronted with these implications, but since the non-accounting students do not take this advanced work they do not learn these more subtle and complex aspects of accounting theory. It is presumed that the non-accountant should also be exposed to these ideas and that the accounting course is the most appropriate place.

One might ask if the best solution for satisfying the needs of both groups would not be in having two different courses, each designed for a particular group. Obviously this solution would result in greater expense to the institution as well

as increased demands upon faculty; a duplication of effort in every direction and perhaps unwarranted because of small enrollment.

The present writer holds that a solution to this problem might lie in a reorientation of present objectives. The typical beginning course adheres to a quite consistent pattern. Regardless of the approach, considerable time is allotted to such things as specialized journals, adjusting, closing and post-closing entries, correction of errors, and other areas the importance of which is on the wane with the passing of "pen and ink bookkeeping." It has been stated earlier that these skills are but means for the non-accountants; their relative importance might be questioned for the accountant (not bookkeeper) of today. The usual defense for including these skills follows Bridgman who maintains that it is necessary to understand operations in order to understand concepts. We do not know what contribution to understanding the inclusion of these skills makes, but the drilling necessary to obtain perfection often leads to ennui and boredom.

In selecting objectives which meet the needs of different students it would be helpful to list the needs of each group and then pick out those things which were common to both groups, thus achieving a "common core" curriculum. One might wonder if this would not be to the disadvantage of those intending to specialize in accounting since it appears that this common core curriculum would devote little attention to the mechanical phases of bookkeeping and accounting. This writer thinks not, for such things as specialized journals the student has little use for until he takes a course in systems or auditing. Perhaps the same thing can be said of adjusting, closing and post-closing entries, worksheets, correction of errors, and the like. If the elementary course objectives

were less operational and more conceptual than the operational notions might be more meaningful to the accounting student when he is confronted with them in the more advanced courses; and it is held here that only the conceptual notions can be of use to the non-accounting student.

At a fairly high level of abstraction the course objectives in contextual terms might include, among others, such things as:

- A. The nature of accounting
  1. Its historical developments
  2. Its rationale
  3. Its functions and limitations
  4. Its different theoretical views and underlying assumptions
  5. Its journal, manuals, and general sources of information
- B. The procedures of accounting
  1. The role of accounting in recording transactions
    - a. The nature of accountable transactions
    - b. The nature of supporting documents or "objective evidence."
  2. The role of accounting in classifying and summarizing
    - a. The systematic relationships recognized
    - b. The purposes of summarization
- C. The significance of accounting
  1. Managerial purposes
    - a. The accounting system as a cost gathering agency
    - b. The accounting system as an agency to prepare reports presenting the data necessary to facilitate decision making.
    - c. The accounting system as an agency to minimize and detect fraud
  2. Social purposes
    - a. The accounting system as an agency to disseminate relevant data to interested parties
    - b. The accounting system as a check on hired management
    - c. Accounting as a tool for measuring and evaluating

Depending on the emphasis desired any of the above may be further developed. Other objectives may be added, and/or subdivision of any of those mentioned is

possible, as is illustrated in the section following.

Let us next consider the needs of society. In any society where wealth is used to produce more wealth, the management or stewardship of entrusted capital requires enlightened judgment. Further, this skillful management must contribute to the social and economic good of all if the system is to survive. What role does accounting play in this society? First, it should be expected that accountants will provide concise, comprehensive reports which will reflect the data necessary to facilitate an intelligent managerial decision (see C, 1, b, above). This phase of accounting has little to do with "books" as we conceive of them in elementary accounting. Second, we expect that the accountants should render meaningful periodic reports. These reports must fit the needs of the interested parties among others, such groups as labor, owners, investors and governments (C, 2, a, above).

It is essential that non-accountants be exposed to the phase of accounting which consists of rendering reports for management purposes; for this is the group which will be expected to make the decisions after a consideration of the alternatives. Contextual objectives might include such things as consideration of what data must be included in a report, which "costs" are relevant, where are the sources of pertinent data, what constitutes a desirable report and so on. These objectives might then appear as subdivisions under C, 1, b, in the list above.

It is also desirable that the non-accountants understand fully the different results obtaining, for example, when current costs are used instead of historical costs. Must not the non-accountant be aware of the implications which result from the use of different though equally acceptable method? The implications inherent in the underlying assumption of accounting that

the unit of account has a stable value necessitates a further inclusion in the course objectives. We might append to the list above:

D. The effect on accounting reports resulting from the changes in the purchasing power of the unit of account

1. Effect on assets purchased in different periods
2. Effect on liabilities and equities originating in different periods

By giving effect to these modifying influences, the resultant curriculum should be extremely effective, essentially "tailor made" for a particular purpose.

Because this is meant to be a paper of general interest, suffice it to say that the selection of objectives must also be determined with a consideration of their compatibility to the educational and social philosophy of the school. Further, selection of objectives should consist in choosing those most attainable through school learning experiences.

All objectives selected should be thought of as having two aspects, contextual and behavioral. Usually we slight the behavioral aspects; but we should not for the vital purpose of education is to modify, change, or temper the learner's outlook, attitude, and skill. Behavioral changes are the *sine qua non* of education. Thus if one objective of the course is to present different theoretical views in accounting and their underlying assumptions (contextual aspect), we must also expect the student to contrast the various theories with respect to their implications for a given problem, to determine, for the given situation, the validity of the underlying assumptions, and to predict the implications obtaining from the use of different theories (behavioral aspects).

Perhaps another illustration might be helpful. Following is a list of thought processes, constructed in what is hoped to be a logical sequential pattern, which might be

the pattern which the student is expected to follow in applying accounting knowledge and technique in a solving of a newly met business problem.

A. Resolve the problem into a form suitable to handling by accounting methodology.

1. Translate the problem into accounting terminology
2. Recognize that data which is germane to the solution of the problem
3. Assemble the germane data and classify
4. Perceive the relationships between the established classes

B. Select and justify the selection of the accounting method and/or technique to be used.

1. Recognize the possible accounting methods and/or techniques which are applicable
2. Select from those possible that method or technique which best
  - a. Meets the issues raised
  - b. Utilizes the data available
3. Indicate on the basis of the economic conditions and needs of the business stated in the problem, the superiority of the method chosen

C. Apply the selected method to the problem and indicate the result in correct accounting terminology and form.

The evaluation of a student's response should be based on all of the steps involved in the problem solving; we should not be primarily concerned with the ultimate answer reached by the student, but rather with his method of arriving at the answer. In our measurement of student progress (changes in behavior) we must endeavor to learn how this part of his education has conditioned him. Have his analytic and interpretive powers been strengthened? Is he better able to relate, organize, and synthesize? Can he better evaluate, more prudently judge? It is in the conditioning of behaviors such as these that the real end of education lies, and it is held that the area of accounting should be fertile ground to nurture the development of these behavioral objectives.

Note in passing that it is important that we select learning experiences which

are most likely to attain our objectives, and that these experiences be organized with regard to continuity, sequence, and integration that they may have their greatest cumulative effect.

The purpose of this paper has been three-fold. First it is suggested that in re-considering which contextual objectives are most desirable, we shift away attention from the mechanics of the subject matter

to the more subtle logical and analytical phases of accounting giving due consideration to the needs of students and the needs of society. Second, that we identify with each part of content, those behaviors which we are endeavoring to condition in the educational process. And third, that our evaluation of student progress must necessarily measure behavioral change.

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Letters in reference to announcements published under key numbers should be sent to:

### AMERICAN ACCOUNTING ASSOCIATION

College of Commerce and Business Administration

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URBANA, ILLINOIS

# PROFESSIONAL EXAMINATIONS

## A Department for Students of Accounting

HENRY T. CHAMBERLAIN

THE following problems were prepared by the Board of Examiners of the American Institute of Accountants and were presented as the first half of the May, 1950 C.P.A. Examination in accounting practice. The candidates were required to solve problems 1 and 2 and either problem 3 or problem 4. The time allowed was four and a half hours. The weights assigned were: Problem 1, 12 points; Problem 2, 13 points; Problem 3 or 4, 25 points.

A suggested time schedule is given below:

Problem 1	45 minutes
Problem 2	60 minutes
Problem 3	100 minutes
Problem 4	75 minutes

### No. 1

The Lee Roberts Manufacturing Company used a standard cost system in accounting for the cost of its single product. Their standard was set as follows:

Standard output per month—10,000 units.

Standard direct labor per unit—8 hours@\$.130 per hour.

Standard direct material per unit:

Material P—10 pounds@\$.275 per pound.

Material Q—5 units@\$.64 per unit.

Total standard cost per unit including overhead on a direct labor hour basis—\$23.55.

The following operating data were taken from the records for the month of March 1950:

In process first of month—none.

Completed during month—8,000 units.

In process end of month—1,000 units, which are one-half complete as to labor and have had all of material P issued for them and sufficient material Q for one-half of them.

Direct labor was \$88,440 which was at a rate of \$1.32 per hour.

Material issued to production:

94,000 pounds of P@\$.26 per pound.

42,600 units of Q@\$.65 per unit.

Overhead for the month amounted to \$61,640.

You are to prepare a schedule showing the variance of actual cost from standard cost and an analysis of variance for labor and material, separating each into the factors which caused them.

Show all computations supporting your schedule.

### No. 2

As of December 31, 1948, the X. B. Manufacturing Company, with outstanding capital stock of \$30,000, had the following assets and liabilities:

Cash	\$ 5,000
Accounts receivable	10,000
Raw material inventory	4,000
Work-in-process inventory	2,000
Finished goods inventory	6,000
Prepaid expenses	500
Fixed assets (net)	30,000
Current liabilities	17,500



During the year 1949, the surplus account increased 50% as a result of the year's business. No dividends were paid during the year. Balances of accounts receivable, prepaid expenses, current liabilities and capital stock were the same December 31, 1949 as they had been on December 31, 1948. Inventories were reduced by exactly 50% except for the finished goods inventory which was reduced by one-third. Fixed assets (net) were reduced by depreciation of \$4,000, charged three-fourths to manufacturing expense and one-fourth to general expense. Sales were made at 50% above their cost of \$40,000. Direct labor cost was \$9,000 and manufacturing expense was applied at a rate of 100% of labor cost, leaving \$2,000 unapplied which was included in the cost of goods sold. Total general expense and selling expense amounted to 15% and 10% respectively of the gross sales.

You are to prepare a Balance-Sheet as of December 31, 1949, and a Statement of Profit and Loss for the year 1949 including therein or in a separate schedule the details of Cost of Goods Manufactured and Sold. Support the formal statements with worksheet or "skeleton" ledger accounts.

### No. 3

The Town of Elm Springs built a town hospital on land previously owned by the town. The building was completed on March 1, 1949. Since that date the hospital has been under the control of a superintendent. He has rendered monthly reports to the town mayor, but these reports have been on a cash basis and have not shown separation of amounts by funds. You have been employed by the town government to prepare financial statements for the ten months ending December 31, 1949, and to do certain other work in connection with setting up an accounting system for the hospital operations. The town wants the financial statements to be on an accrual basis, to the extent such basis is appropriate, and to follow usual fund accounting practices. From the information presented below, you are to prepare statements showing income and expense and financial position.

(1) The total contract price of the buildings was \$240,000. The contractor was paid in the following manner:	
(a) Cash of \$120,000 which was a contribution by the Federal government toward the hospital cost.	
(b) Cash of \$25,000 contributed by the county government toward the cost.	
(c) Hospital bonds issued by the town to the contractor in the amount of \$100,000. These bonds are 5% bonds dated 1/1/49, due in ten years, interest payable semi-annually. They are general obligation bonds of the town but the town wishes to treat them in the hospital fund.	
(2) Equipment was initially obtained as follows:	
(a) Purchased by the town for cash—\$35,300.	
(b) Purchased out of cash donations made by citizens for that purpose—\$9,800.	
(c) Donated equipment which had an estimated value of—\$11,000.	
(3) The statement of cash receipts and disbursements, exclusive of items described above, for the ten months was as follows:	
Received from patients:	
Rooms and meals .....	\$105,314
Fees .....	6,170
Out-patients .....	4,201
Miscellaneous income from meals, etc. ....	515
Received from estate of James Johnson, M.D. ....	25,000
Miscellaneous donations .....	10,410
Received from Beulah Jenkins .....	32,500
Donations from churches .....	1,850
Received from county for county charity patients—room and meals .....	940
Income from rents .....	2,000
Income from bonds .....	2,125
Total cash received .....	\$191,025
Payroll and taxes thereon paid .....	\$ 96,200
Stores and supplies purchased .....	34,180
Equipment purchased .....	27,250
Expense of operating rented property .....	700
Miscellaneous expenses (including bond interest of \$2,500) .....	4,170
Total cash disbursed .....	\$162,500
Balance of cash 12/31/49 .....	\$ 28,525

## (4) Investigation revealed the following additional information:

- (a) Patients' accounts on the books as of December 31, 1949 amount to \$9,403 distributed as follows: For room and meals—\$7,310; for laboratory and other fees—\$1,095; for out-patients—\$998. It is estimated that \$500 of these accounts will never be collected.
- (b) As of December 31, 1949 accrued unpaid wages, etc. amounted to \$5,234; unpaid supply invoices amounted to \$6,810 and accrued utilities amount to \$174. The analysis of miscellaneous expenses shows that there is \$330 of prepaid insurance. Kitchen and other supplies on hand amounted to \$1,760 at cost.
- (c) It has been decided to charge current income with depreciation on general hospital property at the following annual rates based on the year-end balance of the asset accounts:

Buildings—2%

Equipment—10% and 20%

All equipment will take the 10% rate except for \$18,500 of minor items of equipment, which will be depreciated at the 20% rate. Depreciation is to be computed for a full year. The reserve is not to be funded.

## (d) The following facts were determined in respect to the donations:

- (1) The donation from the estate of James Johnson, M.D. was received July 1, 1949. It consisted of two houses and \$25,000 in cash. The terms of the bequest provided that the cash is to be invested and that the income therefrom and from the houses is to be used for the purchase of surgical equipment. The houses had a market value of approximately \$30,000 of which amount \$5,000 was for the land. The estimated life of the properties from date of the gift was 25 years. The houses were rented and in addition to the \$2,000 of rent received there was \$150 receivable as of December 31, 1949. All expenses on the houses for the year have been paid and are included in the disbursements. No purchase of surgical equipment has been approved.
- (2) The miscellaneous donations were made for general purposes of the operation of the hospital.
- (3) The Beulah Jenkins donation received June 1, 1949 consisted of cash and of \$50,000 face value of X Corporation 4½% bonds. Interest dates are June 1 and December 1. The provisions of the gift were: "The amounts are to be invested by said trustees in accordance with applicable law governing trust investments and the income derived therefrom is to be used to defray or help to defray the necessary hospitalization of such indigent women as the trustees shall designate upon application by their physician." The trustees were designated in the document. These trustees have accepted but have never met or transacted any business.
- (4) The donations from churches are to apply toward purchase of an "iron lung." No order has yet been placed for such equipment.

(See next page for No. 4)

## No. 4

The Capital Company finds that it is unable to pay a year-end cash dividend without borrowing. However, its profits for the year 1949, shown by its books as \$83,485, were the largest in its history of operations. Some of the directors are puzzled as to the reason for the small cash balance and weak current position. The accounts have not been audited, but the company management engages you to assist them in preparing an explanation of the situation for the directors. As a part of your engagement you are to prepare a formal statement showing source and application of funds, accepting their profit figure of \$83,485 as a starting point.

Prepare a suitable statement showing source and application of funds.

The following information is available.

## TRIAL BALANCES

Account	Post-Closing 12/31/48		Pre-Closing 12/31/49	
	Debit	Credit	Debit	Credit
Cash	\$ 25,000		\$ 5,000	
Accounts receivable	18,000		20,000	
Reserve for loss on accounts		\$ 1,500		\$ 1,800
Installment notes receivable			25,000	
Inventory of materials	30,000		22,000	
Inventory of finished goods	19,000		13,000	
Inventory of supplies	2,000		2,500	
Investment of S. Co. (50% of stock)	42,500		47,275	
Land used in business	10,000		25,000	
Land not used in business	20,000			
Buildings	90,000		90,000	
Reserve for depreciation of buildings		60,000		36,100
Machinery	170,000		191,000	
Reserve for depreciation of machinery		80,000		72,050
Goodwill and patents	14,000		17,000	
Bond discount unamortized	3,000		2,160	
Prepaid insurance	1,000		1,500	
Accounts payable		48,000		47,500
Notes payable		10,000		15,000
Accrued liabilities		15,000		18,000
Bonds payable—4%		50,000		40,000
Reserve for future inventory price declines		10,000		2,000
Reserve for contingencies		10,000		5,000
Reserve for preferred stock retirement		15,000		5,000
Preferred stock—6%, \$100 par		25,000		25,000
Common stock—\$100 par		100,000		100,000
Treasury stock—common—100 shares			10,000	
Surplus		20,000		20,500
Sales (net)				188,000
Cost of goods manufactured and sold			142,000	
Selling and general expense			28,075	
Bond interest and discount			2,040	
Federal income-tax expense			5,600	
Loss on disposal of assets			3,000	
Gain in value of assets				25,000
Reduction of depreciation reserve				45,000
Dividends and profits of S. Co.				6,900
Miscellaneous income and expense				700
	<u>\$444,500</u>	<u>\$444,500</u>	<u>\$652,850</u>	<u>\$652,850</u>

Explanations of changes in certain of the accounts have been obtained. They show:

1. Provision for loss on accounts was one-half of one per cent of net sales which was charged to selling expense and credited to the reserve. Recoveries amounted to \$500 which were netted against the expense.
2. Investment in S. Co. has been debited with 50% of the profit of S. Co. and credited with a cash dividend of \$2,125 received. The contra entries have been to dividends and profits of S. Co. and to cash.

3. An appraisal was made of fixed assets as of January 1, 1949. It was as follows:

	Undepreciated Value	Depreciation	Net Value
Land used in business.....	\$ 25,000		\$ 25,000
Land not used in business.....	30,000		30,000
Buildings.....	140,000	\$ 85,000	55,000
Machinery and equipment.....	210,000	100,000	110,000
Total.....	<u>\$405,000</u>	<u>\$185,000</u>	<u>\$220,000</u>

This appraisal was recorded by the following entry:

Land used in business.....	\$ 15,000
Land not used in business.....	10,000
Reserve for depreciation of buildings.....	25,000
Reserve for depreciation of machinery.....	20,000
Gain in value of assets.....	\$ 25,000
Reduction of depreciation reserve.....	45,000

The land not used in the business was subsequently sold for \$27,000 payable \$2,000 in cash and the remainder in notes due in equal annual payments over a five-year period starting 7/1/50. The \$3,000 difference between the sale price and the \$30,000 undepreciated value was debited to loss on disposal of assets. Depreciation, computed on an acceptable basis, was charged to expense of the year in the amount of \$13,150. Purchase of new machinery in the amount of \$21,000 was made for cash.

- The company charged \$5,000.00 of research and patent expenditures to the goodwill and patents account and amortized against manufacturing cost, the amount of \$2,000 of the previous balance.
- The company wrote off to bond interest and discount, one-fifth of the bond discount upon retirement of \$10,000 of the bonds at 94 on July 1, 1949. The regular amortization and the result of the bond retirement, including profit, have been included in bond interest expense.
- The company had \$9,000 liability for income taxes included in the accrued liabilities as of 12/31/48. However, only \$4,000 was paid; therefore the \$5,000 was credited to surplus and current expense charged with the estimated expense for 1949.
- Because of price declines during the year, \$8,000 of the reserve for future inventory price declines was utilized by a credit to cost of goods sold.
- During the year the company paid a \$5,000 award rendered against them in a suit. The charge was to a reserve for contingencies which had been created in 1948 because of this and other pending suits.
- During the year the company purchased 100 shares of its own preferred stock for \$11,000. It charged \$10,000 to the preferred stock retirement reserve and \$1,000 to surplus. It has charged surplus with \$1,500 of preferred dividends paid and credited miscellaneous income with the \$300 which it kept because it owned 100 shares of the stock.
- During the year the company reacquired 100 shares of its own common stock for \$12,000. It charged the \$2,000 excess over par to surplus.

### Solution to Problem 1

	Standard Cost	Actual Cost	Variances
<b>Direct Labor</b>			
8000 units finished (64,000 hours@\$.130).....	\$83,200.00		
1000 units in process—half finished (4000 hours@\$.130).....	5,200.00		
	<u>\$88,400.00</u>	<u>\$88,440.00</u>	\$ 40.00
<b>Raw Material P</b>			
8000 units finished (80,000 lbs.@\$.275).....	\$22,000.00		
1000 units in process (10,000 lbs.@\$.275).....	2,750.00		
	<u>\$24,750.00</u>	<u>\$24,440.00</u>	*\$ 310.00
<b>Raw Material Q</b>			
8000 units finished (40,000 units of Q@\$.64).....	\$25,600.00		
1000 units in process (2500 units of Q@\$.64).....	1,600.00		
	<u>\$27,200.00</u>	<u>\$27,690.00</u>	\$ 490.00

*Overhead*

8000 units finished@\$.720 per unit.....	\$57,600.00		
1000 units in process@\$.360 per unit.....	3,600.00		
	<u>\$61,200.00</u>	\$61,640.00	\$ 440.00
			<u>\$ 660.00</u>

\* Favorable variance.

## ANALYSIS OF DIRECT LABOR AND RAW MATERIAL VARIANCE

*Direct Labor*

Price variance (67,000 hours@\$.02 per hour).....	\$1,340.00
Time variance (1000 hours@\$.130).....	* 1,300.00

*Raw Material P*

Price variance (94,000 lbs.@.015).....	* 1,410.00
Quantity variance (4000 lbs.@.275).....	1,100.00

*Raw Material Q*

Price variance (42,600 units@\$.01).....	426.00
Quantity variance (100 units@.64).....	64.00

\* Favorable variance.

(See next page for Solution to Problem 2)



X. B. Manufacturing Company  
Work Sheet  
Year Ended December 31, 1949

# Professional Examinations

333

	Balance December 31, 1948		Transactions		Income and Expense		Balance December 31, 1949	
	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit
Cash.....	\$ 5,000.00		(3) \$ 60,000.00	(13) \$ 46,000.00			\$19,000.00	
Accounts receivable.....	10,000.00		(1) 60,000.00	(3) 60,000.00			10,000.00	
Raw material inventory.....	4,000.00		(12) 15,000.00	(11) 17,000.00			2,000.00	
Work in process inventory.....	2,000.00		(4) 9,000.00	(10) 36,000.00			1,000.00	
Finished goods inventory.....	6,000.00		(6) 9,000.00					
			(11) 17,000.00				4,000.00	
Prepaid expenses.....	500.00		(10) 36,000.00	(9) 38,000.00				
Fixed assets—net.....	30,000.00						500.00	
Current liabilities.....		\$17,500.00	(13) 46,000.00	(2) 4,000.00			26,000.00	\$17,500.00
Capital stock.....		30,000.00						30,000.00
Surplus.....		10,000.00				\$60,000.00		10,000.00
Sales.....								
Cost of goods sold.....			(9) 38,000.00		\$40,000.00			
			(8) 2,000.00					
Manufacturing expense.....			(2) 3,000.00	(8) 11,000.00				
Manufacturing expense applied.....			(3) 8,000.00	(6) 9,000.00				
			(8) 9,000.00					
Selling expense.....			(7) 6,000.00		6,000.00			
General expense.....			(2) 1,000.00		9,000.00			
			(7) 8,000.00		5,000.00			
Net Profit.....							5,000.00	
	\$57,500.00	\$57,500.00	\$327,000.00	\$327,000.00	\$60,000.00	\$60,000.00	\$62,500.00	\$62,500.00

## Key to Transactions

- (1) To record sales

(2) To record depreciation

(3) To record collections

(4) To record labor cost

(5) To record manufacturing expense

(6) Manufacturing expense applied

(7) Selling and general expenses

(8) To close manufacturing expense and manufacturing expense applied

(9) To credit finished goods with cost of goods sold

(10) To transfer completed goods from work in process to finished goods

(11) To transfer raw material to work in process

(12) To record purchases

(13) To record payment of accounts payable

## The Accounting Review

X. B. Manufacturing Company  
Balance Sheet  
December 31, 1949

## Assets

<i>Current Assets</i>			
Cash.....		\$ 19,000.00	
Accounts receivable.....		10,000.00	
Inventories:			
Raw materials.....	\$ 2,000.00		
Work in process.....	1,000.00		
Finished goods.....	4,000.00	7,000.00	
Prepaid expense.....		500.00	
Total current assets.....		\$ 36,500.00	
Fixed assets, net.....		26,000.00	
		<u>\$ 62,500.00</u>	

## Liabilities

<i>Current liabilities</i> .....		\$ 17,500.00	
<i>Capital stock and earnings retained in the business:</i>			
Capital stock.....	\$ 30,000.00		
Earnings retained in the business.....	15,000.00	45,000.00	
		<u>\$ 62,500.00</u>	

X. B. Manufacturing Company  
Statement of Income  
For the Year Ended December 31, 1949

Sales.....		\$ 60,000.00	
Cost of sales:			
Material.....	\$ 20,000.00		
Direct labor.....	9,000.00		
Manufacturing expense.....	11,000.00	40,000.00	
Gross profit.....		\$ 20,000.00	
General expense.....	\$ 9,000.00		
Selling expense.....	6,000.00	15,000.00	
Net income.....		<u>\$ 5,000.00</u>	

## Solution to Problem 3

The following entries are not required but are presented as the summarization of the transactions for the year:

## Property Fund

	(1)		
Hospital Building.....	\$240,000.00		
Due to contractor.....		\$240,000.00	
To record the cost of construction of hospital building.....			
	(2)		
Cash.....	145,000.00		
Contribution from Federal Government.....		120,000.00	
Contribution from County Government.....		25,000.00	
To record contributions for hospital building.....			
	(3)		
Due to contractor.....	240,000.00		
Discount on bonds.....	5,000.00		
5% bonds.....		100,000.00	
Cash.....		145,000.00	
To record payment to contractor.....			
	(4)		
Depreciation.....	4,800.00		
Allowance for depreciation.....		4,800.00	
To record 1949 depreciation.....			

# Professional Examinations

335

(5)		
Amortization of bond discount.....	\$ 500.00	
Discount on bonds.....		\$ 500.00
To record amortization of bond discount.....		
<i>Equipment Fund</i>		
(1)		
Equipment.....	56,100.00	
Fund Balance.....		56,100.00
To record equipment purchased by the town and donated.....		
(2)		
Equipment.....	27,250.00	
Fund balance.....		27,250.00
To record equipment purchased from current funds.....		
(3)		
Depreciation.....	10,185.00	
Allowance for depreciation.....		10,185.00
To record depreciation for 1949:		
	\$18,500.00@20%	\$ 3,700
	64,850.00@10%	6,485
	<u>\$83,350.00</u>	<u>\$10,185</u>
(4)		
Cash.....	1,850.00	
Fund balance.....		1,850.00
To record donation for purchase of equipment.....		
<i>Current Fund</i>		
(1)		
Cash.....	127,550.00	
Income from room and meals.....		105,314.00
Income from fees.....		6,170.00
Income from out-patient department.....		4,201.00
Miscellaneous income.....		515.00
Miscellaneous donations.....		10,410.00
Contribution from County for charity patients.....		940.00
To record cash receipts.....		
(2)		
Payroll and taxes thereon.....	96,200.00	
Stores and supplies purchased.....	34,180.00	
Equipment purchased.....	27,250.00	
Miscellaneous expenses.....	1,670.00	
Bond interest.....	2,500.00	
Cash.....		161,800.00
(3)		
Bond interest.....	2,500.00	
Accrued bond interest payable.....		2,500.00
To set up interest accrued to December 31, 1949.....		
(4)		
Accounts receivable—patients.....	9,403.00	
Income from room and meals.....		7,310.00
Income from fees.....		1,095.00
Income from out-patient department.....		998.00
To set up income earned in 1949.....		
(5)		
Bad debts.....	500.00	
Allowance for uncollectible accounts.....		500.00
To provide for uncollectible accounts.....		
(6)		
Payroll and taxes thereon.....	5,234.00	
Stores and supplies purchased.....	6,810.00	
Miscellaneous expenses.....	174.00	
Accrued wages.....		5,234.00
Accounts payable.....		6,810.00
Accrued expenses.....		174.00
To set up accrued liabilities on December 31, 1949.....		
(7)		
Unexpired insurance.....	330.00	
Miscellaneous expenses.....		330.00
To set up unexpired insurance on December 31, 1949.....		

	(8)		
Inventory of supplies.....		\$ 1,760.00	
Stores and supplies purchased.....			\$ 1,760.00
To set up inventory of supplies on December 31, 1949.			

*Johnson Endowment Fund*

	(1)		
Cash.....		25,000.00	
Buildings.....		25,000.00	
Land.....		5,000.00	
Fund principal.....			55,000.00
To record gift from James Johnson.			

	(2)		
Cash.....		2,000.00	
Rents receivable.....		150.00	
Undistributed income.....			2,150.00
To record income.			

	(3)		
Undistributed income.....		1,200.00	
Allowance for depreciation.....			500.00
Cash.....			700.00
To record expenses paid and the allowance for depreciation on rented property.			

*Jenkins Endowment Fund*

	(1)		
Cash.....		32,500.00	
Accrued interest receivable.....		1,062.50	
X Corporation bonds.....		50,000.00	
Fund principal.....			83,562.50
To record gift from Beulah Jenkins.			

	(2)		
Cash.....		2,125.00	
Accrued interest receivable.....			1,062.50
Undistributed income.....			1,062.50
To record collection of interest.			

	(3)		
Accrued interest receivable.....		177.08	
Undistributed income.....			177.08
To record accrued interest on December 31, 1949.			





## The Accounting Review

*Elm Springs Hospital*  
*Statement of Income and Expense of Operating Funds*  
*Ten months ended December 31, 1949*

<i>Income:</i>			
Rooms and meals.....	\$112,624.00		
Fees.....	7,265.00		
Out-patient department.....	5,199.00		
Contribution from County for charity patients.....	940.00		
Miscellaneous income.....	515.00	\$126,543.00	
<i>Expenses:</i>			
Payroll.....	\$101,434.00		
Stores and supplies used.....	39,230.00		
Miscellaneous expense.....	1,514.00		
Bad debts.....	500.00		
Bond interest.....	5,000.00	147,678.00	
<i>Net loss, before depreciation, bond discount amortization and donations for general purposes.....</i>		\$ 21,135.00	
Donations for general purposes.....		10,410.00	
<i>Net loss, carried to current fund deficit.....</i>		\$ 10,725.00	
Depreciation (charged to building fund).....	\$ 4,800.00		
Depreciation (charged to equipment fund).....	10,185.00		
Amorization of bond discount (charged to building fund).....	500.00	15,485.00	
<i>Net loss, for ten months ended December 31, 1949.....</i>		\$ 26,210.00	

*Elm Springs Hospital*  
*Statement of Current Fund Deficit*  
*Ten months ended December 31, 1949*

Net loss charged to current fund.....	\$ 10,725.00
Equipment purchased—charged to current fund and capitalized in equipment fund.....	27,250.00
	<u>\$ 37,975.00</u>

## Solution to Problem 4

## Statement of Income (per books)

Sales.....		\$188,000.00
Cost of goods manufactured and sold.....	\$142,000.00	
Selling and general expense.....	28,075.00	
Bond interest and discount.....	2,040.00	
Loss on disposal of assets.....	3,000.00	
Miscellaneous income and expense.....	700.00	
Federal income tax.....	5,600.00	181,415.00
		<u>\$ 6,585.00</u>
Profit on investment in S Co.....		6,900.00
Appraisal recorded.....		70,000.00
Profit.....		<u>\$ 83,485.00</u>

## Surplus Statement

Balance 12/31/48.....	\$ 20,000.00
Add—Overaccrual of provision for income tax.....	5,000.00
	<u>\$ 25,000.00</u>
Excess over par paid for treasury shares:	
Preferred.....	\$ 1,000.00
Common.....	2,000.00
Dividend paid on preferred.....	1,500.00
	<u>4,500.00</u>
	<u>\$ 20,500.00</u>

# Professional Examinations

339

## The Capital Company Statement of Application of Funds January 1, 1949 to December 31, 1949

### Funds provided:

#### Operations:

Net income, per books.....		\$ 83,485.00
Add charges to income which did not require the use of funds:		
Recorded loss on sale of land.....	\$ 3,000.00	
Depreciation expense.....	13,150.00	
Amortization of patents.....	2,000.00	
Amortization of bond discount, \$840.00 less recorded profit on retirement of bonds, \$600.00.....	240.00	\$ 18,390.00

\$101,875.00

#### Less credits to income which did not provide funds:

Transfer of reserve for future inventory price decline to income.....	\$ 8,000.00	
Reductions of depreciation reserves.....	45,000.00	
Unrealized increase in land value.....	25,000.00	
Dividend on treasury shares.....	300.00	
Undistributed earnings of S Co.....	4,775.00	\$ 83,075.00

Funds provided by operations.....		\$18,800.00
Reduction of 1948 income tax liability.....		5,000.00
Sale of land not used in business.....	\$ 27,000.00	
Less long-term notes taken as part payment.....	20,000.00	

Current funds provided by sale.....		7,000.00
Decrease in working capital.....		33,800.00

Total funds provided..... \$64,600.00

#### Funds applied:

Purchase of bonds.....	\$ 9,400.00
Purchase of preferred stock.....	11,000.00
Purchase of common stock.....	12,000.00
Dividends on preferred stock.....	1,200.00
Machinery purchased.....	21,000.00
Patents and research expenditures.....	5,000.00
Settlement of law suit.....	5,000.00
	<u>\$64,600.00</u>

### Schedule of Working Capital

	12/31/48	12/31/49
Cash.....	\$ 25,000.00	\$ 5,000.00
Accounts receivable—net.....	16,500.00	18,200.00
Installment notes receivable.....	—	5,000.00
Inventory—materials.....	30,000.00	22,000.00
finished goods.....	19,000.00	13,000.00
supplies.....	2,000.00	2,500.00
Prepaid insurance.....	1,000.00	1,500.00
	<u>\$ 93,500.00</u>	<u>\$67,200.00</u>
Accounts payable.....	48,000.00	47,500.00
Notes payable.....	10,000.00	15,000.00
Accrued liabilities.....	15,000.00	18,000.00
	<u>\$ 73,000.00</u>	<u>\$80,500.00</u>
Working capital.....	<u>\$ 20,500.00</u>	<u>(\$13,300.00)</u>

# ASSOCIATION NOTES

E. BURL AUSTIN

## ALABAMA

The principal speaker before the Alabama Society of CPA's at a March meeting in Birmingham was H. O. THOMAS, a practicing CPA.

Another recent meeting of the Birmingham Chapter of the Alabama Society featured an address by CLARK L. SIMPSON of the Economic Cooperation Administration on the Marshall Plan.

The Alabama Society of CPA's has recently organized in Birmingham an auxiliary organization, the purpose of which is to encourage development of prospective members of the profession, to aid persons to appreciate ethics of the profession, and to stimulate an interest in the profession's growth.

The speaker for the February meeting of the Birmingham Chapter of the Alabama Society of CPA's was W. A. PATON of the University of Michigan.

## CALIFORNIA

### *Golden Gate College:*

EDWARD J. KELLEY has been appointed to succeed the late MYRON M. STRAIN as Dean of the School of Accountancy. DEAN KELLEY practiced as a Certified Public Accountant in San Jose prior to 1936, during which time and until 1941, he was Dean of the College of Business Administration of Santa Clara University. He has been serving until this appointment as Controller of Hastings Clothing Company in San Francisco.

## INDIANA

### *Indiana University:*

R. E. WALDEN has returned from sabbatical leave spent in study on the West Coast.

S. A. PRESSLER is on leave doing research work in cost accounting.

R. R. MILROY is teaching the summer term as visiting professor at the University of New Mexico.

## LOUISIANA

### *Louisiana State University:*

THOMAS J. EDWARDS resigned as instructor in accounting to go with the Department of Internal Revenue.

D. M. SMITH and JAMES M. OWEN were successful candidates in the CPA Examination.

## MARYLAND

### *University of Maryland:*

HOWARD W. WRIGHT has been granted a leave of absence for the academic year 1950-51. WRIGHT has been appointed Assistant to the Controller of Economic Cooperation Administration.

WILLIAM P. CASTLE resigned as instructor in accounting to go with the Bureau of Internal Revenue. His position has been filled by RODNEY G. SARLE.

S. M. WEDEBURG recently addressed cannery plant superintendents on minimum cost records for plant management.

MAYNARD B. WOODBURY recently received his CPA certificate.

## MASSACHUSETTS

### *Massachusetts Institute of Technology:*

RONALD H. ROBNETT has been acting as Consultant of the Research and Development Board of the National Military Establishment.

THOMAS M. HILL is serving as Associate Director of Education, Boston Chapter, NACA.

JOHN A. BECKETT is Director of Membership of the Boston Chapter, NACA, and is serving in the research department of that organization.

ROBERT G. JAMES was recently appointed Treasurer of the Lam Lamp Company of Somerville, Massachusetts.

## MICHIGAN

### *University of Michigan:*

The School of Business Administration was host in April to the third annual Accounting Employers Conference which followed the pattern of past conferences in delving into the problems in the relationship of colleges and the employers of accounting graduates.

Featured participants included H. J. PHILLIPS, Planning Supervisor of the United States Steel Corporation, DAVID W. THOMPSON of Indiana, and E. A. HEILMAN of Minnesota.

## NEW YORK

### *Hunter College:*

MARY MURPHY, now on leave of absence, recently addressed a joint meeting of the American Historical Association and Business History Society on "Revenue in Public Accounting."

*Long Island University:*

The Accounting Society of Long Island University was host in March to **RAYMOND G. ANKERS**, Personnel Manager of Lybrand, Ross Bros., and Montgomery. His topic was "What the Personnel Manager Looks for in Candidates for Positions in Public Accounting."

**JEROME H. TAYLOR** and **LOUIS A. FRIEDMAN** are on leave of absence to complete graduate studies in the field of taxation at schools of law.

OHIO

*Ohio Wesleyan University:*

**REYNOL VERMONT ULLOM** recently passed the CPA Examination and was advanced in rank to Associate Professor.

*University of Toledo:*

**RALPH E. LANCASTER** from Millikin University has recently been made Assistant Professor of accounting.

*Miami University:*

**C. R. NISWONGER** has been appointed to the Ohio Society's Committee on Education.

**ALBERT G. WALD** recently passed the CPA Examination.

OKLAHOMA

*University of Oklahoma:*

**JOHN R. HERZFELD**, appointed instructor in accounting in 1949, received his CPA certificate as a result of the November Examination. All ten of

the present full-time staff in accounting now hold the CPA certificate.

*University of Tulsa:*

The University of Tulsa, together with seven other sponsoring agencies, was host in April to the fourth annual Conference of Accountants. The two-day program was devoted to the general topic "Humanizing Accounts and Accountants." Noted speakers participated from all parts of the United States and representing many specialties related to accounting.

OREGON

*Oregon State College:*

**DONALD D. MACPHERSON** recently addressed a section of the Pacific Coast Economic Association on the subject of hedging operations in Pacific Coast feed mills.

**J. LLOYD LEMASTER** and **RALPH L. BOYD** jointly addressed the College Chapter of the American Association of University Professors on the subject of federal and state income taxation.

**RALPH L. BOYD** recently addressed the Portland Control of the Controllers Institute on the subject of accounting ethics.

TEXAS

*Texas Agricultural and Mechanical College:*

**T. D. LEDBETTER** was successful on the November CPA Examination. This brings to six the number of CPA's in the department.

# BOOK REVIEWS

ARTHUR M. CANNON

*Accounting Techniques Used in Published Corporate Annual Reports* (Third Edition). Research Department, American Institute of Accountants. (New York: American Institute of Accountants, 1949. Pp. 112. \$10.00.)

The third annual survey by the Research Department of the American Institute of Accountants of accounting techniques employed by 525 large American corporations contains a three-year comparison of the treatment of individual items in the financial statements incorporated in their annual reports. Otherwise it adheres closely to the form and arrangement of the preceding studies.

As indicated in the introduction the primary aim of the survey is to give the reader a broad perspective of the latest accounting practices and trends as disclosed in published annual reports. Particular emphasis is placed upon topics dealt with in the Institute's recent Accounting Research Bulletins.

The most striking feature of the study is the proof it affords of the continuing lack of uniformity in many phases of the annual reports of our large industrial companies. To be sure the precepts set forth in the Institute's Research Bulletins have been heeded by a small, albeit enlightened minority of the selected corporations. It is evident, however, that generally speaking time-honored techniques still have greater appeal to corporate executives than well-considered innovations sponsored by the accounting profession.

Take, for example, the recommendation contained in Accounting Research Bulletin No. 20, released in August, 1947 with the unanimous approval of the Institute's Committee on Accounting Procedure. Surely the rationale of listing prepaid items among the current assets rather than as a deferred charge can be grasped by most company presidents. Moreover, the resulting betterment of the current ratio is not calculated to displease the average top executive. And yet the survey shows that "while the number of companies which changed their previous practices in this regard in their 1948 reports was not as great as in the preceding year, about 24 per cent of the 525 companies tabulated are now showing prepaid items in the current assets section."

Failure of industrial companies with few exceptions to adopt modernized accounting nomenclature and techniques must be attributed in part to the reluctance of most professional accountants to invite controversy with contented clients. But in light of the ever-increasing importance of financial accounting in the national economy it is clear that affirmative action toward making published financial statements more meaningful is an inescapable obligation of public accountants individually and collectively.

The survey is presented in five sections supplemented by a list of the companies on which the statistics are based. The first section, dealing with general techniques,

is devoted primarily to an analysis of the extent to which various types of financial statements are certified. In the three succeeding sections the terminology, form and accounting treatment employed in balance sheets, income statements and surplus statements are considered in detail. Various phases of the audit certificate are analyzed in the final section. The selection of the tabulated material and the explanatory notes are excellent throughout. The American Institute of Accountants is to be commended upon its enterprise in making so valuable a study available to financial analysts, corporate executives, accountants and other students of annual reports.

N. LOYALL McLAREN  
Certified Public Accountant

McLaren, Goode, West & Co.  
San Francisco, California

*Standardized Audit Working Papers*. Frederick Staples. (Milwaukee: The Counting House Publishing Co., 1949. Pp. 279. \$4.50.)

This is the third revision of the work originally published in 1938, first revised in 1946 and again in 1947. Its content consists of six short chapters which outline the advantages claimed for standardized working papers and present instructions for their usage, plus illustrations applicable to the audit of a manufacturing corporation. The 1947 edition was reviewed in the April, 1949, issue of *THE ACCOUNTING REVIEW*. The 1949 revision contains no significant changes except that the illustrated working papers have been increased in size to achieve improved readability.

Standardized working papers are individual work sheets containing printed headings for columns or blocks of data to be recorded by the auditor or his assistants during the course of an engagement. They contain also procedural instructions or questions for guidance of the user. The author has in effect worked a standard audit program into the content of the papers themselves. Such incorporation eliminates the need for a separate program and requires only a small supplementary manual of general instructions.

Many advantages are claimed for adoption of these sheets. The author's zealous approach, however, imparts the feeling that he is overselling his product. A statement, for example, that field men may resent the use of an office-prepared program but that they will do higher quality work when they cannot escape its requirements if it is a part of the working papers seems to ignore the all-important element of personal judgment. It is the reviewer's opinion that no amount of standardization nor any set of completely prepared papers can substitute for competence, sound judgment, initiative, and independence of the persons who actually participate in the verification procedures. Desire to present a case for standardized papers is also evident in a chapter on "Special Phases Of, and Innovations Possible, With



Standardized Working Papers" which gives much credit to these papers for some excellent suggestions which might well be followed regardless of type of working sheets employed. Perhaps the major advantage of using such papers is the saving of time possible in their preparation, in indexing, and in examination of the work of assistants. Their greatest disadvantage would seem to lie in their printing costs.

Some accountants may feel that uniformity of content regardless of the nature of the engagement might cause the auditor to substitute form for substance. This possibility, however, is but little greater with these sheets than with ordinary working papers. Adequate survey and proper planning could be reflected in them by alteration or addition to meet the needs of specific situations. This is the responsibility of the supervisor. The senior in charge is still free to apply his judgment and to obtain authority for modification or expansion of the standard program as the audit progresses. Suggests the author, "... only actual experience with standardized sheets will overcome any feeling by an accountant that such sheets may tend to restrict initiative, and demonstrate that they do not increase the time necessary to do a thorough job, on large and small engagements, and that they improve the quality of auditing work generally."

The book will have usefulness in the teaching of auditing primarily as reference material for library assignment. The practitioner also may obtain some useful ideas from its study. Some of its charts, questionnaires, and illustrated working paper content may help to improve procedures and techniques even though one may decide against complete standardization.

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*Audit Working Papers.* C. Oliver Wellington. (New York: D. Van Nostrand Company, Inc., 1948. Pp. c. 200. \$12.50.)

This book illustrates the audit procedures, practices and techniques used by a leading public accounting firm in building a satisfactory set of working papers.

Nine pages of introductory material disclose the office work preparatory to a new audit, the purposes of audit working papers, the purpose and use of a standard audit program, the first few steps of the examination, and the office work necessary between the completion of the examination and the delivery of the report to the client.

Any large accounting firm must set up some means of planning, controlling, supervising and reviewing work done by subordinates. In this case the control is exercised, and certainly made easier, by the use of a standard audit program. The program is printed on tabbed sheets, which also are used as a filing guide. Under this system current as well as prior years' working papers are easily available with a minimum of searching.

The working papers present the results of an examination of an imaginary client. The situations illustrated are selected from those "met in actual practice." The papers on inventories are particularly adequate, with

materials carried both at LIFO and FIFO. Pricing methods are well illustrated.

In the papers on fixed assets, the income tax treatment of exchanges of like assets is illustrated.

An interesting feature of the working papers is the use of continuing schedules taken from the Permanent File. Apparently after the examination is complete these schedules are removed from the current working papers and replaced in the Permanent File. These papers are found under tabs for inventories, fixed assets, mortgages, capital stock, minutes, and organization.

There are some points of treatment about which one might raise questions, but the techniques used and the over-all presentation are excellent. The papers are the actual size and form used by the firm and thus add credence to the presentation. All sheets are, or fold to, 8½ by 11 inches. The indexing, cross-indexing and referencing of the working papers, made easier by the printed tabs, is very fully illustrated. Many other points whose importance is difficult to impress on the student, are well shown in these papers.

This book should certainly be in the library of every school offering a course in auditing. The price puts it out of the reach of most students, but they certainly should be referred to it frequently during the course to round out their auditing education. Practitioners will no doubt be interested in comparing their own techniques and procedures with those found in this authoritative publication.

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*Essentials of Accounting* (Revised Edition). William A. Paton. (New York: The Macmillan Company, 1949. Pp. xx, 863. \$5.50.)

The revised edition of Professor Paton's *Essentials of Accounting* follows closely the general pattern established in the earlier edition. There are minor rearrangements of some of the chapters involving a subdivision of the original subject matter, resulting in an increase in the number of chapters from 38 to 41. An examination of the earlier volume reveals that the book has been entirely rewritten, with emphasis on simplification and readability without loss of content. This improvement has been accomplished with remarkable success.

Like the earlier edition, the scope of the revised edition is much broader than that commonly found in the ordinary elementary text. Complete coverage in two semesters would be a strenuous task for both teacher and student. Even more outstanding is the fullness of treatment of the most fundamental principles. The author comments on these characteristics of his writing in the preface to the first edition: "Opinions may differ as to the precise scope of a book on the 'essentials' of Accounting, and the character of the treatment accorded the particular topics. There is scarcely room for argument, however, as to the need for increasing thoroughness and breadth in accounting instruction, with adequate attention to law, taxation, business finance, valuation, and other collateral fields. . . . For most situations, moreover, the intensive course is sound peda-

gologically. The mediocre student at the worst suffers no additional handicap when he encounters a full treatment of a particular point, and the superior student is decidedly advantaged if given something substantial on which to chew." The revised edition, while it gains all of the advantages of reexamination and rewriting of the earlier one, is pitched at the level of the more intelligent and industrious students.

And yet, it is a book of Accounting "principles," which are put to the tests of fundamental logic and practical reasoning characteristic of one who has been one of the strongest forces in Accounting for many years. For the most part, established rules are endorsed. Nevertheless, the author does not hesitate to condemn the practices of present-day accounting which become weaknesses when examined in the light of the primary function of accounting, which he defines as "facilitating the administration of economic activity." Arbitrary pronouncements and conclusions are avoided. No practice is justified solely on the basis of continued use or consistency. The reader finds piercing investigation into the most controversial problems, and answers based on sound, consistent judgment. The author's position on all of the more perplexing problems is unchanged from the stand taken in earlier works, although there is increased emphasis in particular areas. Stress is given to the effect on conventional accounting statements of a severe change in the general price level. However, the portion of the last chapter devoted to the conversion of statements by means of price indexes is not substantially changed from the earlier edition.

The author, always a front-runner in the search for more descriptive and exacting terminology, has substituted "position statement" for "balance sheet," and "retained earnings" for "earned surplus" throughout. Of lesser importance is the substitution of "income statement" for "income sheet."

The new edition has possibly a greater number of illustrations, along with an abundance of illustrative problems and accompanying solutions, and comprehensive questions at the close of each chapter. A large number of laboratory exercises and problems has been prepared under separate cover to accompany the text.

Accounting literature has taken another step forward with this extraordinary work, which can be read and re-read with profit by students, teachers, and practitioners.

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*Accounting Principles* (Fifth Edition). Howard S. Noble. (Cincinnati: South-Western Publishing Company, 1949. Pp. x, 661. \$4.50.)

This fifth edition of *Accounting Principles* is the beginning book in a three-volume correlated series of collegiate grade texts on general accounting. As such it precedes *Intermediate Accounting* and *Advanced Accounting* by Karrenbrock and Simons and sets forth the basic procedures of accounting in an orthodox manner. In addition the needs of the one-year student of accounting are recognized by including consideration of

the more significant phases of accounting. The text accomplishes the two objectives in excellent fashion.

Professor Noble retains the general presentation used in previous editions of the book. The subject is introduced from the balance sheet equation and the accounting procedures are quickly developed. New features of this edition include chapters on payroll and income tax accounting, an early introduction to the use of business papers, and an early presentation of the accounting records of a professional man to afford an over-all picture of the accounting cycle.

The book is easily read. Short and direct sentences should make the book popular with students. Chapters are broken down under side headings—seldom more than one page in length—to keep students from drifting. Illustrations are plentiful and detailed, and include, in the beginning chapters, photographic reproductions of handwritten accounting records for student reference.

The subjects covered include a beginning chapter on the meaning and purpose of accounting. Chapters IV through VI present the accounting cycle for a non-trading business while Chapters VII through X do the same for a trading concern. Chapters XI through XVI take up interest, accrued and deferred items, assets valuation, miscellaneous procedures and the voucher system in the order named. Payrolls and taxes are covered in Chapters XVII and XVIII. Partnerships are considered in Chapters XIX and XX and corporations in Chapters XXI through XXIV. Chapters XXV and XXVI deal with departmental and branch accounting. Manufacturing and cost accounting procedures follow in Chapters XXVII through XXIX and the book ends with a section on using accounting information through the use of budgets, analyses, and supplementary statements.

Problems and questions follow each chapter. Most of the problems are short and do not involve a series of repetitive transactions with the journalize, post, trial-balance requirement. Fifty-four pages of supplementary problems pertaining to all chapters in the book are included at the back of the book.

One is reluctant to criticize such a good book, for there is much more to commend in it. The early use of a classified balance sheet, the constant "full picture" presentation of the objective to the student (e.g., p. 109), and the use of the cumulative profit and loss statement (p. 589) are a few of the items which will be favored by many. However, the classification of prepaid expenses as deferred charges will be criticized by many accountants. Also, some will object to the reasoning that gains or losses on disposal of fixed assets should be shown on the profit and loss statement because they "must be reported for income tax purposes in the period in which they occur" (p. 237). Because this is a practical book these minor criticisms are of little importance and in each case the author points out alternative treatment or gives an additional reason.

Accounting tests, instructor manual, and solutions to problems and the three practice sets are available without charge from the publisher if the text is used.

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*Introductory Accounting.* George R. Husband and William J. Schlatter. (New York: Pitman Publishing Company, 1949. Pp. xiii, 695. \$5.)

The most notable feature of this introductory accounting text is the freshness of its content. Although it follows a rather conventional approach in the development of basic accounting procedures, it devotes a full discussion to the latest thinking on the recording and presenting of accounting data. For example, such recent developments as the "new-look" balance sheet and the "single-step" income statement are discussed along with the older conventional types. Throughout the text, latest improvements in terminology have been used, and in those instances where accountants have not yet reached agreement upon procedures or terminology, the reader is given a full discussion of the controversy, with the most recent thinking on the issues. This, of course, is not to imply that undue emphasis has been accorded the theoretical aspects of accounting. On the contrary, the text achieves a proper balance in the presentation of the procedural and theoretical aspects of accounting techniques.

The present text is a development of an earlier book by George R. Husband and Olin E. Thomas, and although it follows the same general pattern, the style, material and most of the problems are new.

The first eighteen chapters, which are recommended for the first semester study, comprise a thorough development of basic accounting procedures. This development follows the somewhat conventional pattern, starting with a study of balance sheet items, thence to a discussion of ledger accounts, debits and credits, etc. Though conventional in the over-all approach, the authors have presented each step in the development with rare clarity, and each phase is examined critically for its theoretical implications. In addition to the usual basic subjects treated in these first eighteen chapters, several special topics are developed which are notable contributions to the early phases of accounting training. For example a special chapter is devoted to the trial balance, with particular reference to types and locations of errors; another chapter deals with various business papers and procedures; another with some particular aspects of purchases and sales; and still another discusses classification and codification of accounts.

The content of the remaining sixteen chapters might be classified as follows: first, seven chapters devoted to partnership and corporation accounting; and secondly, nine chapters dealing with a variety of topics which are pertinent to an elementary study of accounting.

The three chapters devoted to partnership accounting cover the usual list of problems: organization, reorganization, division of profits, dissolution, etc. The four chapters on corporation accounting are particularly comprehensive, providing a good foundation for an understanding of the problems of accounting for corporate net worth.

The remaining nine chapters, each devoted to a special phase of accounting, enable a wide degree of flexibility in planning the work of the second semester, and correlate the content of the course with that of later accounting courses. Particularly noteworthy in

this last group are chapters on Taxes and Payroll Procedure, Mechanical Aids in Accounting, and Balance Sheet and Income Statement Analysis.

The text is enriched throughout with numerous illustrations of commercial papers and business forms. The authors are to be particularly congratulated on the diagrams which they have constructed to illustrate certain fundamental accounting relationships.

PAUL L. NOBLE

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*Taxable and Business Income.* Dan Throop Smith and J. Keith Butters. (New York: National Bureau of Economic Research, Inc., 1949. Pp. xxv, 342. \$4.00.)

The subject of differences in net income for business and tax purposes has become an increasingly popular topic as a result of continued high tax rates at a time when the cost of doing business has reached new highs. Of the various books and articles in this field, Professors Smith and Butters and their able assistants have made an outstanding contribution not only because of their scholarly analysis of these accounting and tax problems supported by a mass of statistical data, but also because of their objective approach. In accordance with National Bureau practice, the authors make no policy recommendations, which position permits them to make their study free of any pre-conceived goals. Readers will no doubt reach a number of definite conclusions after studying the contents of this work. The writers do not intend to present new material to the experienced accountant and tax lawyer in their respective fields. They attempt to give the busy accountant, lawyer and economist some background into the other allied professions by showing the conditions and requirements that cause business income to differ from taxable income. The treatment of each subject is necessarily limited in extent.

Part One presents an analysis of income concepts in the treatment of basic problems, depreciation and depletion, inventory accounting, bad debts, interest, bond premium and discount and miscellaneous divergences. Principal differences are grouped into classes: differences in timing, differences arising from the use of direct surplus charges and credits for business purposes, and miscellaneous differences.

Part Two attempts to determine the quantitative significance of the divergences between book profit as shown in publicly available reports and statutory net income. One of the major findings is the fact that during an eight year period, 1929-36, book profit and statutory net income differed only slightly, with book profit generally exceeding net income. This advantage in favor of book profit was found to largely disappear upon audit by the Bureau of Internal Revenue. In certain industries such as mining and utilities book profit exceeded taxable income by a considerable margin, principally by reason of differences in depletion and depreciation accounting. The main sources of divergences were divided into 15 classes, 5 classes affecting the determination of gross income and 8 classes representing deductions from gross income.

Uniformity in tax and business accounting is a de-

sired objective and can no doubt be achieved to a greater extent than heretofore but it is equally apparent that there can never be complete agreement because of certain fundamental differences. Business accounting attempts to reflect annual income and surplus changes with all doubtful items resolved in favor of conservative treatment. The Government in attempting to determine annual taxable income must make allowances for certain political and social objectives such as depletion allowance, percentage of gain recognized in certain capital transactions, and an acute awareness that revenue must be collected at all costs. Neither tax or business accounting is the complete attainment of perfection. Utility accounting, largely influenced by rate making purposes, has by a shift in emphasis created further differences in accounting procedures. On the other hand, the Securities and Exchange Commission has been a strong force in the direction of uniformity.

Early tax authorities having in mind the legislative history of the Revenue Act of 1918, attempted to apply methods of accounting that would "clearly reflect the taxpayer's income." Congress has likewise continued in its attempt to make tax laws conform to recognized business accounting by constant modification of tax laws as was done in 1938 when it authorized LIFO inventory accounting. However, the courts pressing for certainty and quick solution of tax problems have failed to recognize some basic accounting principles, oftentimes at considerable expense to particular taxpayers. Typical cases are the refusal to permit reserves for container refunds and the requirement to include as taxable income in the year of receipt by an accrual basis taxpayer, of prepaid rent, subscriptions and service coupon books. No doubt tax counsel not fully aware of the underlying reasons for basic accounting principles at times has permitted the courts to make accounting errors. Failure to arrive at a common understanding of such basic terms as "accrue" and "reserves" has caused considerable confusion.

This book should be of considerable assistance to the courts and tax counsel in the understanding of troublesome accounting terms. At the same time, the necessity of certainty and finality in the settlement of tax problems with a recognition of constitutional limitations as presented by the authors should enable the accountant and economist to more fully appreciate the legal problems involved in determining taxable income.

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*Differences in Net Income for Accounting and Federal Income Taxes.* Clarence F. Reimer. (Chicago: Commerce Clearing House, Inc., 1949. Pp. vii, 166. \$2.00.)

This is a short book-length explanation of the many points of conflict between net income determined in accordance with generally accepted accounting principles and net income computed for tax purposes. Quickly and easily read, the book covers a broad field without attempting to penetrate deeply at any point.

After brief introductory discussions of the history of

the income tax, the theory of income for tax purposes, and general tax accounting principles, a logical division of the subject-matter places the body of the work in six chapters: IV, Income Not Taxed; V, Non-Income Taxed; VI, Differences in Year of Incidence of Income; VII, Business Expenses Not Deductible for Tax Purposes; VIII, Non-Expense Items Deductible; IX, Differences in Year of Incidence of Expense.

From a broader point of view, the differences with which the book is concerned fall into two categories: (1) differences which are caused by provisions in the Code admittedly requiring departures from accounting practice in the determination of net income, and having their origins in considerations of public policy, administrative convenience, or political expediency; and (2) differences resulting from judicial concepts of net income determined on the accrual basis which are at variance with concepts widely accepted by accountants and businessmen generally. Items in the first category—such as life insurance proceeds, exempt interest, non-deductible expenses, disallowed losses, and percentage depletion—are dealt with in Chapters IV, V, VII and VIII. Prepaid income, reserves for future expenses, and the proper accrual of taxes, falling in the second category, are among the subjects discussed in Chapters VI and IX. Many will wish that they had been allotted a greater share of the book's one hundred and sixty-odd pages. Tax-free exchanges and other transactions which result in discrepancies between book value and the tax basis of assets would also seem to have deserved a fuller treatment than is afforded them.

Where a transaction in one year creates a difference between book profit and taxable net income not only in the year in which it is effected but in a subsequent year, or period of years, the author has included suggested bookkeeping methods designed to insure proper handling of the item as long as its effects persist.

Professor Reimer's work may be prescribed as collateral reading for students in income tax classes and should prove useful in staff training programs of public accounting firms as well. The case references and bibliography will point the way for those who want to explore the subject more extensively.

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*Cost Accounting.* James H. March. (New York: McGraw-Hill Book Co., Inc., 1949. Pp. xi, 558. \$5.00.)

This textbook, to be used in introductory cost accounting courses, has been assigned an objective by the author of "describing factory cost accounting realistically as an integral part of industrial management."

First consideration is given to "Cost Accounting and Management" including treatment of organizational relationships as well as the usefulness of cost accounting to management.

Instead of carrying through the complete development of a single type of cost accounting (i.e. job order costs) in a single section of the book, preliminary survey



chapters are presented early in the text in such fashion that in subsequent treatment of the various cost factors the discussions can include process, job order, and standards concurrently. This plan has its advantages and also its disadvantages.

Underlying procedures used to develop the data needed for costing take a large part of the text material. Details of the operations of cost systems are outlined with liberal use of reproductions of business papers and forms that are now in use.

The text material may be broken down in the following sequence:

1. Introduction to field of cost accounting.
2. Statement of principles of Process, Job Order, and Standard Costs.
3. Ledger procedure followed under each of the plans listed under 2.
4. Procedures followed in collecting basic cost data:
  - (a) Purchase procedure and material control.
  - (b) Labor and payroll procedure.
  - (c) Factory overhead control.
5. Burden application and variance.

Professor March has done a superior piece of work in presenting the principles of cost accounting in a clear, concise, and understandable manner so as to meet the needs of the engineering or business student in a survey course.

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*Mathematics for Finance and Accounting.* J. B. Coleman and William O. Rogers. (New York: Pitman Publishing Corporation, 1949. Pp. 182 plus appendices, 8, tables, 108. \$4.00.)

This new text offers a brief but fairly comprehensive coverage of the mathematical procedures which are useful to accountants. The typography is well designed; in this respect the text is one of the best in the field. The mathematical formulae are presented in a condensed and clear manner.

The order of presentation is standard: Simple Interest and Discount, 14 pages (of which 5 pages are problems; this ratio is fairly constant); Logarithms, 15 pages; Significant Digits, 8 pages; Compound Interest, 28 pages; Simple Annuities, 26 pages; Deferred Annuities, Annuities Due, 10 pages; Collected Formulas—Interrelation, 12 pages; Sinking Funds—Amortization, 7 pages; Bonds, 21 pages; Depreciation, 11 pages; Perpetuities—Capitalized Cost, 7 pages. Chapters 12, 13 and 14, on Probability—Mortality, Life Annuities and Life Insurance contain mathematics of somewhat higher order than the rest of the book. The authors suggest, "These might be omitted at the discretion of the instructor, depending upon the preparation of the class for this type of course" (p. v.).

Appendix 1 proves the useful principle, for tables of the type used by accountants, that "The error made by interpolating in an interval between two table values of a function is less than the error made by interpolating for the value of the function at the midpoint of a double interval made up of the given interval and an equal one

preceding it" (p. 183). The other Appendix reproduces the salient features of a typical bond.

The tables are quite extensive: five place logarithms; seven place logarithms from 10,000 to 11,000; amount of 1 at compound interest, given for  $n$  from 1-100;  $i$  at 1/4%, 7/24%, 1/3%, 5/12%, etc., all to ten places; present value of 1 for the same variables to ten places; compound amount of 1 for fractions  $1/p$  of a period; nominal ratios and effective ratios; factor in annuity formula for  $p$  payments per interest period; compound amount of 1 per period for same factors as compound interest table, to ten places; present value of 1 per period, ditto; and periodic payment that amounts to 1, ditto.

The text concludes with a two-page "Index," and "Answers to Odd-numbered Problems."

Descriptive exposition is cut to the minimum. The authors, who are mathematicians, encounter some difficulties while demonstrating the usefulness of their material to accountants.

Sample quotes:

From Chapter 9, on Bonds: "In order to distinguish the ratio of interest that a bondholder realizes on his investment from the periodic payment which the issuing agent pays at a specified rate on the face of the bond, we have called the latter payment a dividend on the bond" (p. 120).

"In the sale of bonds between dividend dates there are two methods of quotation in general use. One is called the *flat price* and the other, *and interest*. The *and interest* quotation is simply the book value of the bond at any time and is the one commonly used" (p. 131-2).

From Chapter 10 on Depreciation: "A school building may be outgrown and outmoded to the extent of having its useful life ended, though not worn out. This decrease in value with time is known as depreciation. . . . The difference between first cost and scrap value is known as the cost of replacement, or wearing value. Corporations, individuals, or governmental agencies having to replace property of considerable value, often set aside periodically payment into a fund which will accumulate to the cost of replacement during the life of the property. The payment into the fund is the depreciation charge. The book value at any time will be the original cost less the amount in the fund at that time" (p. 141).

As for the Sinking Fund Method of Depreciation: "In a sense this is a straight line method, since the amount allowed for depreciation is the same throughout the life of the asset" (p. 142). "Granting that interest on the investment is a legitimate charge against production, then the yearly depreciation charge should be increased by  $C_i$  to take care of this" (p. 143). (" $C_i$ " is cost times interest, presumably a constant.)

From Chapter 11, Perpetuities—Capitalized Cost: "In texts of this character Capitalized Cost ( $Y$ ) of an item is defined as the amount required to provide for its initial cost as well as the expense of endless replacements when the item is worn out or functionally inadequate" (p. 154).

Through decades of refinement mathematical texts designed for use by students in our field have been stripped to a hard rigid framework of formulae and pro-



cedures. Presumably a skillful teacher can drape this skeletal structure with materials which make it both useful and pleasing, but the texts give him little encouragement.

Perhaps we cannot expect to recapture the appreciation of mathematics as logical truth which led the Pythagoreans to revere numbers as an evidence of the gods. But surely something can be done to revivify these cold assemblages of figures.

Even such an opponent of our mechanistic civilization as the religious leader Gandhi once wrote, "Without properly kept accounts it is impossible to maintain truth in its pristine purity."

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*The Statistical Agencies of the Federal Government—A Report to the Commission on Organization of the Executive Branch of the Government.* Frederick C. Mills and Clarence D. Long. (New York: National Bureau of Economic Research, 1949. Pp. xiv, 201. \$2.00.)

This study was undertaken in March 1948 at the request of Herbert Hoover, Chairman of the Commission on Organization of the Executive Branch of the Government (The Hoover Commission). Its purposes are to survey the organization and operation of the Federal statistical system; to appraise its accomplishment, operating problems and deficiencies; and to make recommendations for improvements. Despite the severe time limitation placed on the authors, these objectives have been well accomplished. The study discloses the many statutory and budgetary difficulties within the framework of which a large group of able government statisticians must work. The recommendations are realistic, and, if followed, would contribute to the better coordination, lower cost and greater usefulness of the statistical agencies.

These agencies and the data they develop and publish have come into being largely in response to the legislative demands of the public and the needs of government and business administrators. In spite of the fact that these demands for new series and for a more detailed reporting of existing series have been met largely on an *ad hoc* basis, the positive accomplishments of the Federal statistical agencies have been remarkable. Nevertheless, the resulting "Topsy-like" growth has produced an overlapping of statistics in some fields and gaps in others, variability in the quality of the data presented, lack of comparability in statistical series, inadequate use of the material available, and excessive development of reports covering some areas of the economy and under-development of others.

To the end of correcting these deficiencies, the authors set forth twenty-eight specific recommendations in the five following areas: (1) organization, (2) division of functions, (3) coordination, (4) respondent relations, and (5) user relations.

Since accountants generally are directly concerned with the final two areas, the recommendations under these headings are of special interest.

The goal of simplifying and coordinating respondent

relations would be achieved through a coordinating agency which would be given power to "provide for and enforce the consolidation of reporting operations and the centralization of collection functions" (p. 134). Relief would be granted to "any Federal agency or officer of any requirement under existing law directing the collection of reports from the public if substantially equivalent information" is available from other reports (p. 135). Efforts would be continued to simplify forms and questionnaires required from small business. Studies would be undertaken to determine the degree to which provisions covering the confidential character of certain reports make for duplication and the means by which such information can be placed at the disposal of other Federal agencies under rules affording proper protection to individual respondents. Moreover, studies would be made of procedural differences and particularly "to requirements for calculating depreciation charges, estimating capital gains and losses, estimating net income, and determining other items in balance sheet and income accounts. This study should lead to recommendations for the standardization of practices, definitions and procedures required of business enterprises in conforming to Federal statutes" (p. 136).

The authors' recommendations for improving the relation of statistical agencies to users would correct the major weaknesses of the present system. It is proposed that the Office of Statistical Standards and Services (1) create and maintain a catalogue of continuing, current statistical series collected or compiled by Federal agencies, with adequate explanatory notes, (2) prepare a general program designed to eliminate waste and minimize duplication, (3) prepare a schedule of timing of publication of current statistics, and (4) collaborate in publishing an annual Statistical Abstract and monthly Digest of Statistics. It is further recommended that close liaison between statistical agencies and users of statistics be maintained and that the costs of statistical services of primary benefit to special groups be shifted in part to these groups.

As our business society becomes more complex the needs for adequate statistical intelligence increase. Business management is today a major source of data and an important user. It is to be hoped that the above recommendations as well as the many other equally noteworthy ones will some day soon find their way into the operating policies of the Federal government.

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*American Transportation in Prosperity and Depression.* Studies in Business Cycles No. 3. Thor Hultgren. (New York: National Bureau of Economic Research Inc. 1948. Pp. xxxiii, 397. \$5.00.)

This volume is one of several planned monographs by the National Bureau of Economic Research, each of which deals with the cyclical behavior characteristic of an important economic activity. The study is con-

cerned primarily with the railroads, although some analysis is made of the relatively meager data available with respect to the transit industry, highway traffic, pipe lines, and water transport. Transportation events after 1938 are treated only incidentally, but it appears that despite the vastly increased traffic during the war period the behavior of costs and profits adhered to the pattern characteristic of peacetime expansions.

Using the reference chronology distinguishing periods of expansion and contraction which was developed by Burns and Mitchell in *Measuring Business Cycles*, the author analyzes the movement of goods and people, the supply and utilization of equipment in freight and passenger service, workers and their performance, fuel economy, prices and wages, and the behavior of costs and profits. These features of railroading, among others, are all found to be affected by business cycles. Fluctuations in freight traffic during the period 1869-1938 conformed to cycles in business, although ton-miles usually reached a peak later and a trough earlier than business. Passenger travel varied with business conditions but was more stable than industrial production or the movement of goods. It is found that the share of traffic going to the railroads decreased from 1920 to 1938, and that new transport agencies penetrated the market more rapidly during contractions than during expansions. Periods of expansion are characterized by heavier carloads, by longer trains and heavier trainloads, by a more intensive use of cars and locomotives, and by greater productivity of labor. During periods of contraction there is more empty movement of cars, a larger amount of unserviceable equipment, a greater speed of trains, and relatively more unused hours of labor paid for than in expansions. The author finds that orders for additional equipment conformed to traffic cycles, but he does not conclude that orders for new equipment are closely related throughout expansion to the rate of growth. Hence, he renders a negative verdict on the "acceleration principle" as regards the railroads.

In bringing together the maze of cyclical reactions, the author directs attention to the behavior of prices, costs, profits, and income distributions. Freight rates and passenger fares are sluggish and do not rise or fall with traffic or business activity; actually, there was often

a net fall in unit operating revenue during expansion and a net rise during contraction; and unit costs, including operating expenses, taxes, rents, and interest, usually moved inversely to traffic cycles. The most significant factor here was the declining fuel and labor requirements per unit of traffic during traffic expansions, which more than offset the rising rates of payment for labor, fuel, and materials in prosperous times. But the changes in unit costs were greater than the changes in the average "price" received for service, with the net result that unit profits were normally higher at the end than at the beginning of cyclical expansions and lower at the end than at the beginning of contractions in traffic. Unit profits tended to rise most rapidly early in expansions and to fall fastest early in contractions. It was not highly characteristic of the railroad industry, however, to have "an ominous narrowing of the profit margin while the physical volume of business is still growing, and an auspicious widening while volume is still diminishing." (p. 315.) Aggregate net income sometimes continued to rise or decline after the turn in unit profit, and owing to stable fixed charges, was more variable than traffic or railway operating income. Dividend distributions have fluctuated with corporate earnings, but not in proportion.

The foregoing findings are suggestive of the many interesting questions which are probed in the course of analyzing in meticulous detail the wealth of railroad statistics. A large number of charts and tables illustrate the material. The explanations of trends and other significant points are clearly stated and indicate a thorough familiarity with transportation economics. To the reader who finds the detailed statistical analysis and presentation somewhat formidable, a concluding chapter on future cycles affords an excellent summary of the essential findings. The study is exceedingly well done and is a contribution to economic literature of importance and interest both to students of transportation and business cycles.

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